The Utility of Diagnostic Schemata when Diagnosing Mental Illness in General Practice

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ABSTRACT

Background

Those with mental health problems are much more likely to be seen by a general practitioner than a specialist psychiatrist. A large body of research over many years has highlighted the poor detection rate of mental illness by general practitioners in those who attend. There is inference that the poor detection rate results from either not using or inappropriately using diagnostic schemata such as ICD-10 or DSM-IV (or their primary care versions). However, there is little data that seeks to understand why diagnostic systems have such poor uptake in general practice.

Aim of research

This research sought to understand the utility of diagnostic schemata for general practitioners as well as understanding what features would be required in order to increase their usefulness.

Methodology

A two stage process was used for this research. A qualitative stage comprising nine focus groups of 34 general practitioners was initially undertaken with the purpose of understanding the relevant issues in depth. A quantitative second stage based on the results of the qualitative stage was then initiated. The second stage was a survey of 1,000 vocationally registered general practitioners in New Zealand with 41.4% return rate.

Results

The survey confirmed that general practitioners infrequently use diagnostic schemata, 82% replying never or rarely. Poor knowledge and little experience of schemata was reported (75%). Other reasons were complexity (66%), rigidity (57%), not reflecting mental illness seen in general practice (51%), lack of management focus (49%) and poor reliability (44%).

When making a diagnosis of mental illness, the stated principal purpose was assistance with choice of pharmaceutical treatment (70%). Other reasons cited were communication with colleagues (67%), assisting with decisions regarding referral

(55%), providing a patient with a label for their symptoms (52%), assessing safety of the patient or others (48%) and documentation (36%).

The utility of new schemata could be improved if they could assist with choice of pharmacological intervention (94%), increased sensitivity of diagnosis (92%), increased specificity of diagnosis, referral decisions to secondary care (85%) and informing prognosis (78%). Integration of diagnostic schemata with existing computerised clinical notes systems was considered important.

Conclusion

Low uptake of diagnostic systems in general practice represents lack of both a shared language and shared understanding of psychiatric disease between specialty psychiatry and general practice. It is unlikely that significant gains can be in the efficient and effective recognition and treatment of mental illness in primary care until there are solutions to these problems.

DEDICATION

To my wife Rachel and my sons Matthew and Simon.

ACKNOWLEDGEMENTS

My appreciation for the wisdom and thoughtfulness of my two supervisors, Professor Ross Lawrenson and Professor Graeme Mellsop.

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CHAPTER 1 – THE RESEARCH CONTEXT

1.1   INTRODUCTION

This chapter will provide a context for this research. The following will be established:

- A high burden of mental illness has been found in societies worldwide.

- New Zealand has rates of mental illness that are equivalent with most developed countries.

- Many of those with mental illness will see a general practitioner.

- New Zealand has specific problems of rural populations and cultural differences in society that impact on mental health care.

- A stepped system of care is used in New Zealand that encourages use of specialist psychiatric services only for those with significant or problematic mental illness.

- Commonality of language and diagnostic criteria is necessary for a stepped system of care to work effectively.

- The discipline of specialist psychiatry has provided this language and diagnostic criteria.

- It would appear that general practitioners do not use formal diagnostic criteria.

- The detection rate of mental illness by general practitioners is low.

- Treatment of some mental illness by general practitioners would appear sub-optimal.

- Reasons as to why general practitioners do not use diagnostic schemata remain unknown.

1.2   PREVALENCE OF MENTAL HEALTH PROBLEMS IN NEW ZEALAND AND OVERSEAS

International surveys in the developed world generally show a six-month period prevalence of diagnosable mental disorder in approximately one-quarter of populations(1). One-third of these people will seek medical help for their disorder(2). Of those seeking help, three-quarters will see a general practitioner and one-quarter will see a psychiatrist(3). From the provider perspective, general practitioners identify one in five patients seen as having psychological symptoms when measured against

criteria of mental illness used by psychiatrists(4). The Christchurch Psychiatric Epidemiology study found a lifetime prevalence of severe mental disorder of 63% for males and 68.5% for females and overall 6 month prevalence for all levels of severity of 28% (5,6).

The New Zealand experience regarding the burden of mental health problems in general practice echoes overseas data. Research indicates that mental health problems, as defined by current diagnostic schemata, are common amongst general practice attendees in New Zealand with validated tools estimating that one in three people presenting to a general practitioner have had a diagnosable mental disorder in the previous 12 months(7). Thus the burden of psychiatric disease presenting to general practice is considerable when framed by standard psychiatric diagnostic criteria.

1.2.1. Difficulties in measuring incidence and prevalence of mental illness.

Mental illness does pose epidemiological challenges particularly concerning the reliability of data and the wide number of measurement tools that are well described and widely debated (8). It is noted that many of the studies quoted above report prevalence data. While prevalence data is useful, such data does not establish causation. Prevalence data refers to the quantity of disease in a population. Point prevalence refers to a 'snapshot' of the quantity of disease at a particular time. Period prevalence refers to the amount of disease during a specific time period. Estimates of point prevalence are mainly researched using single pass surveys. Incidence refers to the rate of occurrence of disease over a given period of time. Incidence data is commonly collected by observing cohorts over time and taking repeated counts of those who have developed the disease in question .

In general, prevalence data is methodologically less complex to collect than incidence data. The added complexity, time scales and expense of collecting incidence data may preclude this method of research in favour of prevalence studies. For example, Krupinski and Stoller reported on changing incidence of psychiatric disorders diagnosed on admission to psychiatric institutions in Victoria, Australia between 1919 and 1971, a study requiring over 50 years of accumulated data(9). Mental illness, because of its cyclical nature, creates further difficulties in data collection as the time of onset may not be easily recognised. The relatively infrequent occurrence of specific psychiatric disorders adds to the difficulties of study duration.

Jorm, commenting on methodologies used in research reported in The New Zealand Mental Health Survey, discussed a number of difficulties with measurement tools and measurement assumptions in survey work applicable to mental health(10). Methodological issues, (such as use of lay interviewers), inaccuracy of memory for lifetime diagnoses, prevalence rates being dependant on constructions of the measuring instrument and the diagnostic criteria as well as the categorical rather than dimensional nature of diagnostic criteria are reported by Jorm to confound measurement. Further, he states that mental illness may manifest differently in different sociodemographic groups and using the same instrument to measure mental illness across all groups may give misleading results. A range of methodological issues was evident in the studies reviewed above concerning the prevalence of mental illness that exemplify the difficulties in collecting reliable information. These include the use of different measurement tools, potential differences in how culture affects presentation for medical services, selection of study participants and application of the tools.

As discussed by Hirsch and Weinberger (11), many studies have also documented an increased prevalence of schizophrenia in economically deprived areas, yet fail to answer the more complex question of causation; do socially deprived living conditions cause schizophrenia or are those with schizophrenia more likely to live in socially deprived conditions? The authors propose that many people in the prodromal stages of schizophrenia drift into lower status occupations and live in more deprived locations (social drift). This conclusion is supported by an important 1963 paper by Goldberg and Morrison who found that the fathers of young males with schizophrenia had very similar patterns of social class as the remainder of the population but the sons who had the disease experienced social and material deprivation(12). Further, onset of the disease in adolescence was strongly associated with lack of professional or trade skill. A later onset of disease was associated with better educational status.

Social drift as a factor influencing prevalence data is not limited solely to schizophrenia and has been implicated as a causative factor in higher rates of other mental disorders such as depression in socially deprived populations(13) and of alcoholism(14). Clearly, social drift alone is insufficient to explain the higher incidence of mental illness in those living in socially deprived conditions as there is convincing evidence that social deprivation is associated with increased incidence of a

wide spectrum of mental illness(15,16). However, if the timing of onset of disease is unclear, but the disease and potentially its prodrome is associated with social drift to lower socioeconomic status, what will be observed is increased prevalence in a population that is socially and materially deprived but not necessarily higher incidence.

1.3 CONCERNS OVER THE DELIVERY OF MENTAL HEALTH CARE IN NEW ZEALAND

Complicating factors for New Zealand mental health care include the high proportion of the population that live in rural or semi-rural areas with subsequent difficulties in accessing health care(17). Particular issues for Maori are the separate risk factors of social and material deprivation; factors that have been shown to increase the incidence of mental illness(18). A comment in a Ministry of Health document, Mental Health Workforce Development Framework, acknowledged the overall challenges facing mental health care in New Zealand: "Mental health services have developed rapidly in the last 10 years. Their inability to meet the needs of the community has been acknowledged and recognised through increased funding"(19). Other influential organisations have also commented publicly on the perceived state of mental health care in New Zealand. Summarising the Mason Report, the Human Rights Commission state: "The Inquiry identified a lack of national leadership, as well as inadequate resourcing and under funding which had resulted in many of the mental health services available being poorly planned, often inappropriate and, at times, inhumane"(20).

It would appear that mental health care delivery in New Zealand is less than optimum. A significant contributor to difficulties experienced with health care delivery is the low rate of identification of mental health problems at the primary care level. A contributing factors to this may be lack of shared understanding on diagnostic structures between primary (general practitioner) and secondary (specialist psychiatrist) care, lack of understanding of how diagnoses are made in primary care and traditional teaching curricula at undergraduate level that emphasises diagnostic schemata of low utility when transferred into the general practice environment.

1.4 EXPECTATIONS OF GENERAL PRACTICE IN MENTAL HEALTH CARE DELIVERY

The role of a general practitioner in New Zealand with regard to health services is to participate as a component of a wider health system. The Primary Health Care Strategy would emphasise the central role of primary care in this wider health system. It is expected that a general practitioner will manage minor illness within the community and without recourse to secondary services. For episodes of major illness it is usual that secondary care services will become involved and this involvement is routinely, but not always instigated by the general practitioner. The structure of mental health services generally follows this model. A review article of mental health services in New Zealand described this structure in some detail as part of a study into funding changes to health services that occurred in the 1990s and the impact of these specifically on mental health care(21). The conclusions are presented visually in Figure 1. Epidemiological information available at the time was used to model configurations of health care(2, 5, 6). The data used would suggest that there is a 20% prevalence of mental health problems in the community at any one time. Of those with mental health problems, about 8% are expected to be diagnosed and managed in the community by primary mental health services. There would remain 3% of the population that need to be managed predominantly in secondary care and less than 0.1% requiring intensive psychiatric care.
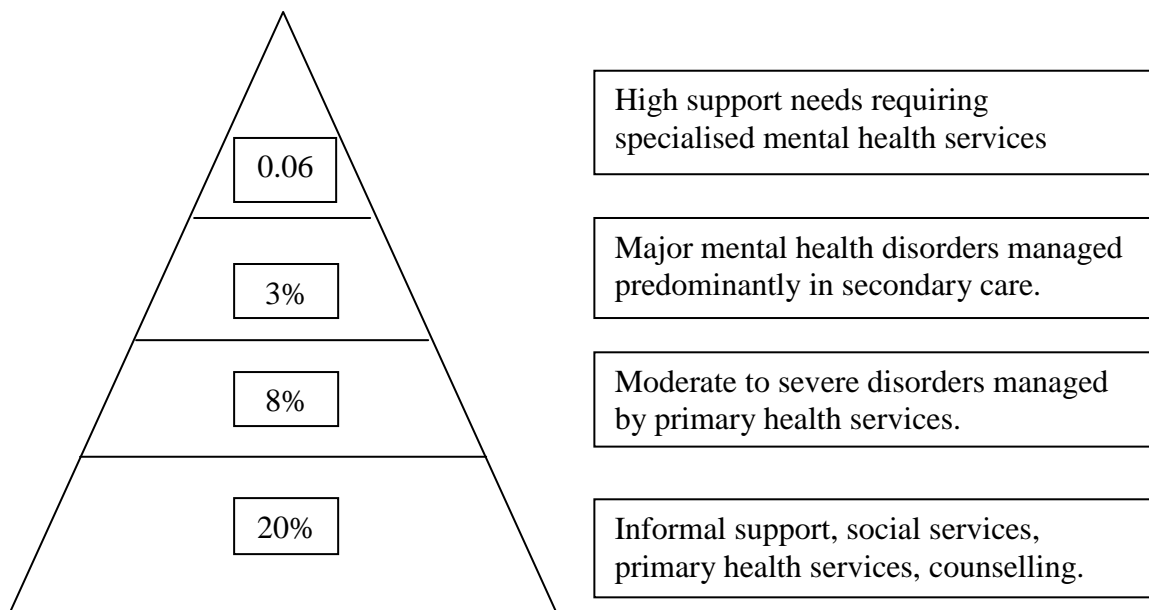
Figure 1. Stepped interventions for increasing severity of mental illness (taken from Wilson J. Mental health services in New Zealand. Int J Law Psychiatry. 2000;23(3-4):215-28)

Although there could be debate concerning the detail of percentages of those with mental illness that should be allocated into each section, the model remains useful in its descriptions of gradations of mental illness and differing levels of care that are considered appropriate for each grade. This model reflects a wider generic concept of stepped care that would be common to many disease states and is not specific to managing mental health problems**.**

This model makes several assumptions. For transition of patients from less resource intensive interventions through to more restricted and resource intensive interventions there should be commonality of language that is used to describe mental health problems. There should also be commonality of diagnostic criteria so that there is appropriate allocation of health resource according to need. Implicit in the model is a dimensional component to mental illness where severity of illness is recognised rather than a purely categorical approach that emphasises diagnostic silos. There is also an assumption that mental illness managed in general practice will be appropriately managed.

A relevant question concerning the transition of patients through the levels of intensity of management in this model would be "Who is defining the language and criteria of diagnosis and why?" Those with expert knowledge content will have considerable influence on the language used to describe mental illness and on the diagnostic criteria used. Psychiatry as a medical discipline embodies expert knowledge and therefore those who practice as psychiatrists will define the language and diagnostic criteria used to describe mental illness.

1.5   THE CENTRALITY OF DIAGNOSIS IN PSYCHIATRY

1.5.1   Brief historical overview

Philippe Pinel is widely regarded as providing the first conscientious and systematic study of those with mental illness. Although more famous for removing shackles from the insane in a French asylum, his observational work became highly influential on defining and treating mental illness. In the introduction to his book published in 1806 "Traite medico-philosophique sur la maniea" he states:

> … I abandoned the dogmatic tone of the physician; frequent visits, sometimes lasting, several hours a day, helped me to familiarize myself with the various shouting, and madness of the most violent maniacs. I take careful notes on the facts observed.

His observational studies led to the removal of dangerous and ill informed therapies and their replacement with more humane and effective modalities and the reorganisation of staff in institutions caring for those with mental illness. He published a book in 1798 "Nosographie philosophique" in which he offered a classification of disease and included mental illness. His classification replaced the contemporary beliefs of demonic possession as the cause of mental illness with what could be considered acceptable modern aetiological causes such as hereditary and physiological origins as well as social and psychological stress. Pinel's classifications were strongly based on observation. Of particular note, Pinel separated dementia praecox (later termed schizophrenia) from 'folie circulaire' (the forerunner of bipolar disorder).

Jablensky provides interesting insights concerning the development of nosology (the branch of medical science dealing with the classification of disease) in psychiatry since Pinel(22). Just over 100 years ago, Kahlbaum described relationships between clinical symptoms, clinical course, outcome, neuropathological findings and aetiology as delineating a natural disease entity. Before the beginning of the last century, this theory was developed further and applied by Kraepelin, particularly with regard to the study of psychosis. Kraepelin defined disorders by common patterns of symptoms (syndromes) rather than specific sets of symptoms and incorporated information gained from studying the course of a disease(23). Although it was quickly found that neuropathological correlations with disease entities had little supporting evidence, the relationship of the central cohesion of disease with the clinical course and outcome remained and became the basis of classification of disease in psychiatry(24). The development of conventional and atypical antipsychotics as well as several distinct groups of antidepressants seemed to echo the notion of a specific pathogenesis leading to specific diagnosis with a single best mode of pharmacological treatment.

The first widely accepted methods of classifying mental illness were the ICD-6 and DSM-I released in 1949 and 1952 respectively. A revision of the DSM-I led to the DSM-II being released in 1968. Both the DSM-I and DSM-II took a strongly psychodynamic position on diagnosis(25). The psychosocial approach to psychiatric diagnosis found in the 1950s and 1960s did not allow clear distinction between the mentally well from the mentally unwell(26). The notion of mental illness existing as a continuum held sway and accepted that all individuals display some degree of mental illness, those with more severe illness experiencing some level of dysfunction as a result. Further, the delineation of the well from the unwell was of secondary importance to understanding the psychological reasons for aberrant behaviour. A psychosocial basis of psychiatry also raised questions as to the legitimacy of psychiatric illness falling within a medical domain rather than being seen as a product of political and social aetiologies and therefore having political and social solutions. Research in psychiatry across this time echoed the social belief system underpinning psychiatric thought and became increasingly distanced from research methods and approaches found in mainstream medical thought. Because of these concerns, a growing body of thought in psychiatry sought to standardise psychiatric diagnosis and demonstrate that these standardised systems had acceptable diagnostic reliability(27).

The shift from a predominantly psychodynamic view to a medical model occurred with the development of the DSM-III in 1980 and the ICD-10 in 1992(28,29). These systems heralded a shift from a psychoanalytic and sociological perspective to a research based medical model. The DSM-III defines mental disorder:

> ... each of the mental disorders is conceptualised as a clinically significant behavioural or psychological syndrome or pattern that occurs in an individual and that is typically associated with either a painful symptom (distress) or impairment in one or more areas of functioning (disability). In addition there is an inference that there is a behavioural, psychological, or biological dysfunction, and that the disturbance is not only in the relationship between the individual and society.

This definition is used with only minor revisions in the DSM-III and DSM-IV series of diagnostic systems.

Both DSM-III and ICD-10 systems required the application of criterion based diagnostic rules where the criteria are purely descriptive and are devoid of aetiological links. The diagnostic process became the link between disease and treatment. Not only did these systems allow greater reliability in making diagnoses, they became the common language amongst many of those involved in mental health care, have become part of the conceptual framework of the discipline and reinforced the discipline of psychiatry as a bona fide member of medical sciences(30). The importance of the DSM-III is nicely captured by a quote from a 1993 paper on the history of this particular classification system:

> A survey of leading psychiatrists showed that the DSM-III was considered the most important psychiatric publication to appear between 1970 and 1980. DSM-III is commonly declared to be the most significant factor in promoting what has been called the 'remedicalization' of American Psychiatry(31).

1.5.2 Criticism of diagnostic schemata in psychiatry

Controversies over the validity of psychiatric diagnoses have occurred for many years. Outside the enormous quantity of popular literature criticising psychiatric diagnoses, more conventional medical research has also questioned the validity of diagnosis. Pilgrim succinctly summarised the current position:

> On the one hand, many consider it to be pseudoscientific and an unhelpful form of medicalisation, which obscures our understanding of the social causes and consequences of madness and misery and the social control implicit in the role of professionals. On the other hand, many social groups still accept its legitimacy(32).

Bertelsen comments on the differences between the diagnostic habits of older psychiatrists in comparison with the younger generation when the DSM-IV and ICD-10 were accepted into practice:

> While the elder generation of psychiatrists are focused on applying the correct individual treatment for what may prove to be a wrong ICD-10 diagnosis, the younger generation of psychiatrists are focused on applying correct and reliable ICD-10 diagnoses, for which they may apply stereotyped and poorly adapted treatment programs(30).

While on the surface, such differences appear to be minor, the description is of very different diagnostic processes.

1.5.2.1 Technological path dependence

A systems perspective on the multiplicity of imperatives driving the development of psychiatric diagnostic schemata is given by Manning(33). He points out that uptake of innovation (such as the DSM) in society is dependent on three factors; values for and against the innovation, networks of contacts between interested stakeholders and how the innovation as a solution to a problem is described. The stakeholders in the uptake of the DSM were far wider than treating physicians; insurance organisations, governments, health care institutions and those receiving mental health care all had vested interests in what was potentially a significant development in psychiatry.

Existence of a Diagnostically Related Group provided certainty for health care planning, financing, accountability, research and budgeting and the momentum gained by these influences could overshadow clinical disquiet. Once development and acceptance of diagnostic schemata had occurred, the concept of technological path-dependence becomes relevant where the cost of redesigning the technology is prohibitive and therefore its shortcomings are simply accepted.

1.5.2.2 Controversies in diagnostic schemata

The criticism levelled at the DSM and ICD systems cover a range of issues. The 'all or nothing' clinical reasoning enforced by adherence to diagnostic schemata, as there is little provision for tentative or provisional diagnoses and diagnoses that have a required duration component cannot be made prior to the prescribed time despite clear clinical indications of diagnosis. Tasman comments on the evolving narrow utility of psychiatry being the prescribing of drugs as psychotherapy is gradually removed from the curriculum of training in psychiatry and skills in this area are lost to the wider world of psychiatry(34). Berrios casts doubt on the validity of the act of classification by stating that psychiatric phenomena are not stable natural objects but are man-made constructs that continually evolve(35). He argues that because of their dynamic nature, psychiatric phenomena do not have the stability necessary for classification. Jablensky notes the use of psychiatric classifications as a contributing factor that enables the imprisonment of political dissidents, the historical euthanasia of over 70,000 psychiatric patients in Nazi Germany and the current de-institutionalisation of the mentally ill that has become driven by economic rationalism rather than the ideology of social psychiatry(22).

1.5.2.3 Values in diagnostic schemata

A recurring theme in the criticism of current methods of classification concerns the concept of values. Turbott emphasises the importance of religion and spirituality in mental health, the difficulty of integrating these into medical science and the resultant gap between psychiatrists and patients produced by the scientifically driven discipline of psychiatry(36). The complexity of mental disorder and the continually shifting boundary between medical-scientific concepts with those of a moral-humanistic dimension was used by Fulford as the basis for arguments to include values alongside facts in making diagnoses of mental disorder(37). Francis and Egger question the

supposed objectivity of classificatory systems by asking what kinds of explanations are favoured, what professional and societal needs are met and what future directions are excluded by such systems(38).

1.5.2.3 *Medical naturalism as a theoretical structure for psychiatry*

It would seem that disease classification in psychiatry is drawing increasing criticism and that its central role in psychiatry being questioned. The criticism can be summarised as questioning both the narrow scope of the process and the appropriateness of the process being applied to mental health. Historically psychiatry has undergone many transformations along a continuum from neuroscience to psychoanalysis and back again with neither side finding a lasting dominance(39). Pilgrim developed a framework for positioning arguments on the utility of psychiatric diagnoses and describes three separate stances(32):

> 1. Medical naturalism; the object (mental disorder) precedes the subject (those using the term). This is essentially an objectivist world view that sits very comfortably with the science base that permeates through conventional medicine. It contends that psychiatric disorders exist independently of the observer.
>
> 2. Radical constructivism; diagnoses are context specific, socially negotiated outcomes that are produced from psychiatric knowledge, activity and power.
>
> 3. Critical realism; this stance acknowledges the two widely divergent world views above by conceding the reality of mental illness in an objectivist way whilst being subjectively conceptualised.

Conventional thought in psychiatry is based in medical naturalism. Radical constructivism represents a very different way of conceptualising mental illness and is the base from which much of the criticism of psychiatric diagnosis arises. Pilgrim suggests critical realism as a blending of two otherwise quite antagonistic world views that offers understanding and solutions to difficulties in diagnosing and treating mental illness that are poorly captured by one stance alone.

1.5.2.4 *Technical rationality as an expression of medical naturalism*

An emphasis on learning information has dominated medical education(40). Schon has explained this devotion to bare fact with the relative exclusion of other forms of knowing in his description of traditional medical school curriculum:

From the point of view of Technical Rationality institutionalized in the
professional curriculum, real knowledge lies in the theories and
techniques of basic applied science. Hence these disciplines should come
first. 'Skills' in the use of theory and technique to solve concrete
problems should come later on, when the student has learned the relevant
science – first, because he cannot learn skills of application until he has
learned applicable knowledge; and secondly, because skills are an
ambiguous, secondary kind of knowledge. There is something disturbing
about calling them knowledge at all(41).

Technical rationality emphasises detached and objective scholarship judged by logical
structure and pursuit of knowledge without any immediate application of that
knowledge. It emphasises basic science above practical knowledge. There are,
therefore, strong similarities between the tenets of technical rationality and
categorisation in psychiatric diagnosis. Schon further argues that indeterminate zones
of practice characterised by uncertainty, uniqueness and value conflicts are central to
professional practice. However, such indeterminate zones fit uncomfortably with the
hegemony of technical rationality and therefore what aspiring practitioners need most
to learn, professional schools seem least able to teach.

When the content of learning and the process of learning are incongruous, the
student is more likely to remember the messages inherent in the process than the
content. This reflects on the notion of the 'hidden curriculum'. Miller and Seller have
described the result of such learning on the student of medicine:

We reward them for compliance, rather than independence; for giving the
answers we have taught them rather than for challenging the conclusions
we have reached; for admiring the brilliance of purely scientific advances
rather than developing greater sensitivity to the inequities in health care
we have too often ignored(42).

The combination of these variables may produce a deficient learning experience in
relation to the principles expounded by Schon. Those being taught may receive
insufficient teaching in mental health. The learning that does occur may focus on

information, rather than skills and abilities. There will be a corresponding lack of research concerning professional practice in mental health. In an already overcrowded curriculum, it is likely that this deficient content will be a significant part of the learning process in that students will form impressions as to the relative importance of mental health in the existing medical culture. The learning that does occur will have a significant informal component: observation and experience of senior practitioners involved in the care of those with mental health problems.

1.6 THE TENSION BETWEEN GENERAL PRACTICE AND PSYCHIATRY

1.6.1 Low detection rate of mental illness by general practitioners

Medical and lay literature is littered with papers adversely criticising general practitioners for failing to diagnose existing mental illness in their patients, depression in particular(43,44,45,46). The studies that determine prevalence of mental disorder in general practice commonly use standard diagnostic criteria such as the DSM-IV and ICD-10. Attempts to improve performance of general practitioners in diagnosing mental illness encourage the use of diagnostic stratagems such as depression scoring systems and diagnostic schema(47).In the conclusions of a study that found poor correlation between general practitioner diagnosis and diagnostic system, the authors commented:

> Primary care practice patterns do not seem to result in application of appropriate skills and therapeutic attitudes to detect, diagnose, and correctly manage the majority of mental disorders that occur(48).

This echoes a perception that general practitioners should be embracing the central concepts of psychiatry when diagnosing and managing mental illness in the community. One paper reported the findings of a low rate of detection of mental disorders and stated: "Training programs for general physicians must be directed at improving recognition and diagnosis and at enhancing the availability and quality of mental health interventions"(49).

1.6.2 Poor performance in diagnosis by general practitioners

Research shows little or no effect of educational initiatives on outcomes of general practitioners practice of psychiatry(50,51,52). A range of possible explanations for the apparent failure of general practice as a distinct group inside the wider profession of medicine to meaningfully participate in diagnosis and treatment of mental disease include inadequate diagnostic skills, inadequate interview skills, poor training at undergraduate and post graduate levels, insufficient consultation time and inadequate knowledge(46,47,48,49)**.**

Despite such negative outcomes, some studies have shown more subtle changes that are of note. A comparison between depressed patients in primary care and hospital care in the US reported that family practitioner detection rates increase with increasing severity of symptoms and that clues such as past history, level of distress and severity of symptoms are important factors in predicting a diagnosis of depression(53). The MaGPIe study quoted above indicated that general practitioners identified about half of presenting patients with psychological problems during the previous 12 months(7).

It would seem that the discussions concerning failure of general practice to diagnose in the manner of specialist psychiatry do not recognise that general practice represents a fundamentally different discipline than psychiatry. Importing concepts and problem solving methods from outside of general practice is fraught with difficulty. Katerndahl et al delineated three areas where diagnostic schema represented an uncomfortable fit with primary care: the presence of significant distress in primary care that did not meet the threshold for mental illness, the arbitrary nature of threshold criteria and the relatively brief duration of symptoms in some cases(54). DSM criteria are based on presentations of disease to psychiatrists that are both differentiated and rehearsed by transiting through the primary care system. The very nature of primary care is of unrehearsed and undifferentiated problems.

1.7 USE OF DIAGNOSTIC SCHEMATA BY GENERAL PRACTITIONERS

Khin undertook a limited study of a restricted group of 43 general practitioners, finding that 40% use DSM or ICD coding when diagnosing mental illness(55). All

general practitioners in the study had been involved in the development and piloting of a questionnaire designed to assess general practitioners attitudes to managing patients with mental disorders. The group was very small, from a single locality and with a shared interest in developing the questionnaire. Consequently, it is potentially misleading to generalise the results of this study.

An article summarising the results of The Michigan Depression Project reported on the results of focus groups with general practitioners(56). The purpose of the focus groups was to explore their views on detection, treatment and collaborative care of depression. The conclusions were:

- Detection is based on functional rather than diagnostic criteria; formal schemata are not used.

- Primary care physicians only detect those patients they believe require treatment.

- Patient resistance to both diagnosis and treatment require the doctor to carefully consider the implications of diagnosis before discussion with the patient.

- Ongoing treatment of depression is very time consuming for the physician and requires careful negotiation with patients. This leads to caution in diagnosis.

Unfortunately, these data were unpublished but were referred to in the article. The only information to be gleaned from the article was that formal schemata was not used. There is no method of assessing the robustness of methodology, appropriateness of conclusions and therefore the transferability of this qualitative research to the wider primary care community. An exploratory study of British general practitioners agreed that general practitioners do not use formal diagnostic criteria but the study was very limited in scope and design(57).

Research by The MaGPIe Research Group found that disability or impairment in level of functioning, not diagnostic schemata, were the key diagnostic tools used by general practitioners, but the study was not designed to directly measure the use of diagnostic schema in general practice(58). A qualitative research project undertaken also by members and associates of the team explored feelings of general practitioners about the recognition of mental health issues(59). Again, the paper was not designed

to understand the prevalence of use of diagnostic schemata, but did strongly infer that such schema was not routinely used in general practice.

Apart from Khin's work on a small and select sample of general practitioners, there is no research that clarifies the uptake and use of diagnostic schemata by general practitioners. Further, there is no research that clarifies why such schemata are not used or what features general practitioners feel are important to include in diagnostic systems.

1.8   SUMMARY

A gap has been identified in the research literature concerning general practitioners diagnosis and management of mental illness. For a mental health system to function well, there must be appropriate transfer of patients through ascending levels of specialisation, from community support, primary health care and finally to specialist health care. There is general agreement that a significant burden of mental illness is undiagnosed by general practitioners and of those treated by general practitioners, some are inappropriately treated. Shared language and shared diagnostic criteria are necessary if there is to be effective communication across all treatment providers for those with mental illness. Diagnostic schemata have been designed to provide many aspects of a shared language and shared diagnostic criteria. There is a perception that diagnostic schemata are significantly underutilised in general practice and that this may be responsible for inadequate detection and treatment of mental illness. Complex contextual issues would appear to contribute to the poor rate of detection and therefore raise concern over the utility of such diagnostic systems in general practice.

CHAPTER 2 – LITERATURE REVIEW

The use of a wide range of different diagnostic tools was revealed in the literature search. These have been annotated in Appendix 2 with a brief description. A discussion regarding the validity and reliability of these tools is beyond the scope of interest of this thesis.

2.1   INTRODUCTION

A literature search was conducted to understand the nature of published research on the topic of how general practitioners diagnose mental illness. The questions that the literature review was to answer were:

- What is known about how general practitioners make a diagnosis of mental illness?
- What research has already been undertaken to determine the frequency of use of diagnostic schemata, such as DSM or ICD, by general practitioners?
- What is known about the utility of diagnostic schemata such as DSM and ICD to general practitioners and primary health care?

This chapter establishes the following:

- Diagnostic coding is widely used in New Zealand general practice but there are concerns over the inconsistent use of coding and inconsistent application of coding categories.
- There is very little international or New Zealand data concerning the use of diagnostic schemata by general practitioners.
- The sparse data that do exist suggests that few general practitioners use diagnostic schemata.
- The epidemiological data support the notion that mental illness is common in the community. The likely prevalence of mental illness in those presenting to a general practitioner is between 20% and 50%.
- The detection rate of mental illness by general practitioners is variable but probably lies between 30% and 50%.
- Increasing severity of symptoms increases the likelihood of detection of mental illness by general practitioners.
- Subthreshold syndromes are common.

- Subthreshold disorders are not classified by DSM-IV criteria and there are variations in how they are defined.
- There are sparse and conflicting data concerning the treatment of subthreshold disorders.
- There is little evidence that treatment of mild mental disorder, particularly depression, is associated with better patient outcomes.
- Applying secondary care derived diagnostic tools in general practice does not improve performance of general practitioners.
- General practitioners use severity of symptoms, level of distress, degree of disability, sleep disturbance and suicidality as markers of mental illness.

2.2 PROBLEMS EXPERIENCED

The major problem experienced with the literature review was the poor match between the subject of the thesis and the ability of search engines to find relevant material. This thesis is best conceptualised as running across, rather than along disease and medical classifications such as found in Medical Subject Headings (MeSH); it is concerned with management process and mental processes and as such, does not fit well with standard search terms. For example, the initial search was undertaken on the Pubmed database using the MeSH terms of "Family practice (incorporates general practice) AND Diagnosis AND Mental Disorders" The search produced 285 articles. Articles focusing on treatment, in foreign languages without translation, on epidemiological aspects of mental health care and articles where the diagnosis of mental illness was secondary to the focus of the research were excluded. This left 52 articles for review. The majority of these articles focused on therapeutics for mental health problems in primary care, leaving five papers of relevance. Similarly, the MeSH terms "Epidemiology"[Mesh] AND "Primary Health Care"[Mesh]) AND "Mental Disorders"[Mesh] produced one paper that was irrelevant to this research.

An Embase search was conducted using the terms general practice/family medicine, mental illness and diagnosis. The resulting search found only one article(60). Similarly, while acknowledging that Medline is simply a subset of Pubmed, a Medline search using the search criteria of mental disorders (limited to English language, humans etc) and family practice produced 15 papers, the majority

of which were peripheral to the topic of this thesis. A search of the PsychINFO database produced 154 articles of which 29 were of interest. Closer inspection revealed that less than six of these were useful. The CINAHL (Cumulative Index to Nursing and Allied Health Literature) database was initially searched for 'family practice' and 'mental illness' which produced 91 articles. Of these 91, five were of interest. Of these five, two had been identified by searches through other databases, leaving three articles.

However, standard methodologies were used as part of the ongoing update of literature. Pubmed facilitates a constant update of new articles according to MeSH headings. In this case, the headings of "Family Practice"[Mesh] AND "Mental Disorders"[Mesh] AND "diagnosis"[Subheading] were used to push relevant articles rather than pull relevant articles over the duration of the write-up. These articles were then searched for relevant references as well as their content. This was a somewhat useful method of literature searching.

2.3   PRODUCTIVE METHODS OF FINDING RESEARCH

A much more productive process in finding relevant articles was the 'snowball' approach. Starting with a PhD thesis on a topic close to this one, a list of relevant papers was found(61). A paper published from the PhD was also valuable in locating relevant papers(46). More recent review papers previously collected provided further lines of data. Of particular value was the use of Google Scholar. This application not only is a search engine for research papers but gives detail of other papers that have cited a particular paper as well as 'related articles'. It was thus possible to find significant numbers of relevant research articles. Similarly, Pubmed produces a list of 'related articles' alongside a featured paper and this was used extensively while building a picture of previous research relevant to this thesis. This method of finding relevant research in the area was considerably more time consuming than expected.

2.4   PERCEPTION OF GENERAL PRACTICE IN THE LITERATURE

What is striking about the literature produced by these searches is the preponderance of articles written by psychiatrists and others who were not general practitioners that instruct general practitioners on how to treat various mental disorders. Further, there is a sense of 'authority' in many of the articles yet without acknowledging how

mental health issues may be different in general practice or how the discipline of general practice may be unique in its own way. This attitude of 'teacher to student' as the basis of a relationship between specialist disciplines and general practice found in the literature is not new; it was described by Balint in 1973(62). Such an overly simplistic way of looking at problems that occur in general practice by those outside the discipline will be examined further in this thesis as it has been responsible for a great deal of wasted time and energy.

2.5   DESCRIPTIVE TERMS USED IN THIS RESEARCH
Utility

For the purpose of this discussion, the term 'utility' will be accepted as 'the quality of being of practical use' as defined by Wordnet and produced by Princeton University. When discussing matters of utility in psychiatric diagnoses, it is difficult to avoid the debates over the distinctions and similarities between the terms 'utility' and 'validity'. Kendell and Jablensky provide useful concepts in this regard(63). They describe validity in psychiatric diagnosis as the ability to divide syndromes according to natural boundaries that separate them from other disorders by zones of rarity (a categorical approach). These natural boundaries can be defined(64). There is an implicit assumption that psychiatric disorders are not characterised by continuous variation in symptoms and therefore do not represent arbitrary loci on a continuous variable. Validity is not context specific but is dichotomous; the disease is either present or not.

Utility of diagnosis is a measure of provision of useful information about prognosis, treatment options and furthers understanding about the disease. Utility in this sense is a continuous, not dichotomous property; information can be graded in terms of usefulness. It is not exclusive to one disease entity or name; overlapping populations or several rival definitions of a syndrome do not necessarily adversely affect the utility of information. Utility of diagnostic systems implies a wider concept of usefulness as it implies not only utility of diagnosis but other aspects important to uptake such as ease of use, availability of system as well as the 'fit' with current work systems and practices. Validity is a necessary component of utility.

Diagnostic system

The term 'diagnostic system' has also been used. This refers to the diagnostic schemata for mental illness of the DSM family and the ICD family and also includes, for both, the primary care versions.

Schemata

It is also useful to clarify how the terms 'schema' and 'schemata' will be used. The Encarta Dictionary definition of schema is "an organisational or conceptual pattern in the mind"(65). The Merriam-Webster's Online Dictionary defines schemata as "a mental codification of experience that includes a particular organised way of perceiving cognitively and responding to a complex situation or set of stimuli"(66). Both sources state that the plural of schema is schemata but the Merriam-Webster's Online Dictionary also indicates that 'schematas' is acceptable. For this thesis, schema will refer to a single entity by which mental illness is diagnosed (such as the DSM-IV) and schemata will refer to more than one framework for diagnosing mental illness (such as the DSM-IV and ICD-10).

The community of general practice

Although 'general practitioner' has shared meaning in New Zealand, Australia and the British Isles, outside of those regions, other descriptions are used. 'Family physician' is common in both the USA and Canada and describes doctors who have very similar training and responsibilities. I will use the term 'general practitioner' as including those who would be called 'family physicians'. Grouping all doctors who are general practitioners and referring to them collectively does require some justification.

Socio-cultural education theory, as described by Lave and Wegner, provides a framework for doing so(67). The term 'community' of practice refers to a recognisable grouping of people in society. The original research, for example, was undertaken with midwives, tailors, quartermasters, butchers and alcoholics. The term can also be used to describe a grouping of doctors, for example a group of overseas trained doctors working in New Zealand(68).

Wenger further explores the defining characteristics of a specific group(69) (p73-89). He argues that practice defines a community through three dimensions: mutual engagement, joint enterprise and a shared repertoire. Mutual engagement in

the work of the community involves shared lines of communication, relationships within the community and social order in the community. Examples of communication are the journals of Colleges of general practice, newsletters from representative bodies and continuing professional development meetings.

The shared repertoire refers to the culture of the community, the shared understandings on its history, shared ways of doing things, shared meanings on the language used within the group and the concepts that have been developed by the community during its work. The strong focus on continuity of care and personal care by general practitioners exemplify this.

A joint enterprise is a domain of work and interest. Membership implies a commitment to the domain and competency in the work. Specific post graduate training in general practice with examinations during this time is commonly undertaken by those who wish to work in the domain of general practice.

Mental illness is commonly seen by general practitioners. The role of a general practitioner in diagnosing and managing mental illness is meaningful and coherent. There are specific lines of questioning in a patient interview, processes to exclude other illness and a choice of a limited range of management solutions to offer. The overall structure used will vary little from practitioner to practitioner although there will be variations on the central theme. Clinical notes record what has happened and what management plans are. Many practices share care of patients amongst several general practitioners with little conflict over diagnosis or management. It is these shared attributes (shared repertoire, joint enterprise and mutual engagement) found in the community of practice known as 'general practice' that is the rationale for referring collectively to 'general practitioners'.

2.6   DIAGNOSIS RECORDING

2.6.1   READ codes

The prescriptive nature of diagnostic systems is different than the recording of a diagnosis. The purpose of the diagnostic systems was, in part, to improve reliability of diagnoses. The diagnosis recording systems do need passing mention here. In New Zealand, READ codes are very commonly used in general practice(70). As much as there are distinct advantages in the almost universal use of a single coding system, the disadvantages of inconsistent application of READ codes together with differing

views on what constitutes a diagnosis significantly reduce the usefulness of this recording system. READ codes were originally designed for primary care use and later developed for secondary care. They represent a hierarchically-arranged controlled clinical vocabulary(71). The design purpose was to record summary clinical and administrative data. READ codes map to ICD codes.

2.6.2 SNOMED

A recording system termed SNOMED CT (Systematized NOmenclature of MEdicine-Clinical Terms) will soon be available in New Zealand. The rollout of SNOMED was supposed to occur in 2007 but there have been significant delays. It is designed to provide a common shared terminology for all aspects of the electronic clinical record. Its background is in an amalgamation in 1999 of READ codes and an early version of SNOMED based on the needs of pathologists. Canada, Australia, Denmark, Lithuania, New Zealand, Sweden, The Netherlands, the United States and the United Kingdom are the charter countries that are developing the standard under a single umbrella organisation, the International Health Terminology Standards Development Organisation (IHTSDO). The system is designed to principally meet the needs of clinicians and, in doing so, has some flaws of terminology and logic(72). SNOMED CT is a diagnosis recording system, however, the difficulties of reliability that occur with READ codes will be no different for SNOMED CT.

2.6.3 ICPC

The ICPC is a system of diagnosis recording developed by the World Organisation of Family Doctors (WONCA). The website states: "It was designed as an epidemiological tool to classify data about three important elements of the health care encounter i.e. reasons for encounter (RFE), diagnosis or problem, and the process of care"(73). It is promoted as providing solutions to the shortcomings of categorical diagnostic systems because of its simplicity, its feasibility of use, its dimensionality and its capability of providing an adequate method of communication between primary and secondary care(74). A more critical view would suggest that the system holds little more advantage than other purely descriptive systems and that reliability of diagnosis therefore remains a deficit of note. However, capturing data on process of care does give useful information on surrogate outcome of the consultation.

2.7   USE OF DIAGNOSIS CODING IN GENERAL PRACTICE

2.7.1   Overseas data

The literature indicates poor accuracy and consistency when using READ codes for coding all general practice consults(75). Although there is little published material on the reliability of READ codes for diagnosing mental disorder in primary care, the available data suggests that coding for mental health issues is poor. A study on disease coding in six inner London general practices found an overall failure to code rate of 20% but 37% for mental health issues in one practice(76). A second practice in the study showed overall non-coding rates of 26% but 38% for mental health problems. It is probable that the coding rate is lower for mental health issues than for all general practice consults because of lack of shared systematic diagnostic criteria in mental health in comparison to other disease categories. As the authors state on page 481, "GENERAL PRACTITIONERs commented that psychological problems were more difficult to code and that less information was entered about more complex consultations".

A UK study on assessing accuracy and completeness of coding by general practitioners for psychosis found surprisingly good results(77). The authors claim an overall 88% sensitivity for coding of schizophrenia and 91% for all non-organic psychosis. However, although the paper states that the practices are representative of practices throughout the UK, the paper also reveals that significant educational initiatives occurred to train the general practitioners in coding and there were substantial financial benefits to the practice if the disease coding rate was maintained above 90%. This limits the generalisability of the findings as few practices are in a position to attract funding in this way.

A Scottish research initiative focused on the sensitivity of disease coding across a wide range of clinical indicators(78). One indicator was depression and the analysis found a 47% sensitivity calculated over all practices for this condition with 95% confidence intervals of 31-57%. This compares to an overall sensitivity for all conditions of 75% with 95% confidence intervals of 71-76%. The study included data from 41 practices and for each practice, 250 patients were selected at random thus giving potentially just over 10,000 samples. The flaws in this study regarding generalisability are that the practices were selected on the basis of ranking according

to use of READ codes and then were further selected by those who expressed an interest in the research. Under such circumstances, the research represents a picture of what is possible rather than what is happening. It is unlikely that the results would be generalisable to New Zealand general practice.

2.7.2   New Zealand data

The data from New Zealand indicate 65% of practices were using a coding system in 2004. This robust survey achieved an 80% return rate from 1,180 practices (all general practices in New Zealand at that time) invited to provide data. Of those using a coding system, 95% used READ codes(70). This study would not reflect the uptake of coding today. Many organised general practice groups require general practitioners to code for specific disease states such as diabetes and use well described criteria for coding. The practices are financially rewarded for coding. However, although the prevalence of use of coding is probably significantly higher than the 65% found in the study above, outside of a very small range of diseases it is unlikely that coding is occurring consistently or accurately.

2.8   THE EPIDEMIOLOGY OF MENTAL ILLNESS IN THOSE PRESENTING TO PRIMARY CARE

2.8.1   Older studies

An international, but somewhat dated, exploration of psychiatric morbidity in general health care settings was undertaken by the World Health Organisation and reported in "Mental Illness in General Health Care"(1). The authors found 29 papers published between 1970 and 1990 that reported prevalence of mental illness presenting to the equivalent of general practitioners across 13 countries(p2). The data from these early studies are collated in Table 1.

Table 1. Prevalence of mental illness reported internationally					
Prevalence	10 – 19%	20 – 29%	30 – 39%	40 – 49%	50 – 59%
No. of studies	5	8	6	6	3

Of these studies, the majority used the General Health Questionnaire (GHQ), three used the Centre of Epidemiological Studies Depression Scale (CES-D) and seven used the Self Reporting Questionnaire (SRQ). The remaining three studies used unique measurement tools.

The authors propose four possible reasons for such variability; differences in concepts of illness, true differences in prevalence, differences in help seeking behaviour, and demographic differences. Of the 29 papers in total, nine were from the USA, three were based on UK populations, two from Australia, two from India, two from Brazil and one each from Italy, Netherlands, Kenya, Colombia, Sudan, Philippines, Saudi Arabia and Guine Bissau. Given the wide variation in countries of origin of the research, it is not surprising that results are inconsistent.

Table 2 shows the data when filtered by removing studies using measurement tools apart from the GHQ and for which there is data available. What is immediately obvious is the wide variation of prevalence data when using the same tool or variations on the same tool that identifies mental illness in populations. Although it could be argued that other tools are more accurate than the GHQ at assessing mental illness, the high degree of variability in detected prevalence of mental illness is of considerable interest.

Table 2. Prevalence of mental illness as measured by the GHQ						
AUTHOR	YEAR	Prevalence in %	N	GHQ TYPE	COUNTRY	DETAIL
Goldberg[79]	1970	50	553	60	UK	Suburban London general practice.
Goldberg[80]	1976	30	365	60	UK	South Manchester single practice
Chancellor[81]	1977	52	1301	30	Australia	Sydney metropolitan general practice
Findlay-Jones[82]	1978	28	4798	60	Australia	All practices in Perth, Australia
Hooper[83]	1984	28		28	USA	Semi rural town
Cohen-Cole[84]	1982	48	150	28	USA	Outpatients attending a clinic at a University teaching hospital
Kessler[85]	1985	35	1072	30	USA	Semi rural town
Vasquez-Barquero[86]	1986	19	1223	60	Spain	Unclear

Von Korff[87]	1987	25	1242	28	USA	Primary care clinic.
Bellantuono[88]	1987	36	153	30	Italy	Unclear
Boardman[89]	1987	43	920	28	UK	South east London.
Ormel[90]	1990	46	2237	30	Netherlands	Multiple general practices.
Mari and Williams[91]	1984	46	120	60	Brazil	Single practitioner
Mari and Williams[92]	1986	55	870	60	Brazil	Three primary care clinics
Shamasundar[93]	1986	36	882	12	India	Single general practice

Within the group of studies that used the GHQ, some important differences may account for the range of prevalence results reported. The studies were conducted in a variety of countries, There may be true differences in prevalence between countries or differences in cultural acceptability of mental illness may influence how respondents will reply to questions in the GHQ. As detailed, one of the studies was undertaken in a university teaching hospital out-patient clinic whereas the remaining studies were based in more traditional general practice. Even amongst the studies in traditional general practice, one was in a semi-rural town while others were in large cities.

Four different versions of the GHQ were used in the studies, six using the GHQ-60, for using the GHQ-30, four using the GHQ-28 and one using the GHQ-12. A review and comparison of several versions of the GHQ indicated that there were differences in how the versions perform(94). The authors commented that the 'gold standard' in terms of reliability, validity, sensitivity and specificity was the GHQ-60. The shorter versions of the GHQ are subsets of the GHQ-60 and as the number of items in the questionnaire decreases, the standard error increases. This may account for some of the variance in prevalence shown in Table 2.

A comment made by the authors of the studies that applied the GHQ in Brazil indicated that there were difficulties in using the GHQ due to high levels of illiteracy in the population and that using assistants who read the questions may have confounded the data.

2.8.2   Recent studies

A relatively recent (2004) Belgian cross-sectional survey randomly selected 2,316 attendees to general practice who were aged 18 or older(95). Mental illness was

defined as meeting DSM-IV via an intermediary step of the PRIME-MD, an instrument designed to facilitate mapping of symptoms to DSM-IV criteria. The results indicated that 42.5% of patients met 'caseness' for threshold or subthreshold conditions.

A five year cohort study by Jackson et al was designed to understand the evolving nature of detection or non-detection of mental illness by general practitioners(96). This study provided useful information concerning the nature of mental illness presenting to general practice. Baseline data revealed 29% with mental disorder, depression comprising the majority of these with 18.8%. A prevalence study in rural general studies involving 350 attendees found little difference between rural and urban rates of mental illness(97). The details of these studies are presented in Table 3.

Table 3. Comparison of studies using the PRIME-MD diagnostic tool				
Diagnosis	Jackson et al (96)	Ansseau et al (95)	Philbrick et al (97)	Spitzer et al (98)
Method	PRIME-MD	PRIME-MD	PRIME-MD	PRIME-MD
Number	500	2,316	350	1,000
Major depression	8.4%	13.9%	8%	12%
Minor depression	10.4%	4.4%	8.9%	6%
All depression	18.8%	31%	21.7%	26%
Generalised anxiety disorder	2%	10.3%	2.0%	7%
Other anxiety	11.4%	8.7%	10.3%	11%
All anxiety	13.4%	19%	12.3%	18%
Panic disorder	1.4%	2.8%	2.3%	4%
Somatoform disorder	Not given	18%	11.1%	14%
Eating disorder	Not given	2.3%	2%	3%
Probable alcohol abuse	Not given	10.1%	6%	5%
TOTAL WITH DISORDER	**29%**	**42.5%**	**34%**	**39%**

Jackson et al undertook their 5 year cohort study at an army medical centre that cared for army personnel and their dependants and excluded non-English speaking patients. This selection process may have biased the results even allowing for data that suggests the study group were similar to non-army populations in the Washington DC metropolitan area in terms of race, age and gender.

Ansseau et al undertook their study in Belgium and either at office visits (70%) or home visits (30%). The authors revealed that there is universal coverage of medical care and cost barriers to care are removed as a result. The study did take place in winter, a factor known to increase rates of depression and the general practitioners were a self selected group who may have had a greater interest in mental health issues.

Philbrick et al based their study in two very different practices in rural U.S.A. One practice had a 41% black population, the other 14% with corresponding difference in median family income. Again, non-English speaking patients were excluded. The data from the two sites was combined for analysis.

Spitzer et al chose 4 centres in the U.S.A, two of which were hospital based practices, one an army medical centre and a University based family practice clinic(98). Like the previously discussed PRIME-MD studies, non-English speaking patients were excluded.

All of the above recent studies used the PRIME-MD tool for diagnosing psychiatric disease in general practice. Its usefulness is its ability to classify according to DSM-IV criteria. Its use requires a two stage process of a self 26 item questionnaire followed by a decision scheme used by the practitioner. A recent review of the reliability of this tool revealed some concerning issues pertaining to test-retest reliability(99). The report did not mention the statistical test applied but did report k values as a measure of agreement between two measurements. It is assumed that the k value refers to Kappa co-efficient. The self administered questionnaire achieved kappa co-efficient of between 0.32 to 0.47. The results of using the two stages of the tool to give a diagnosis achieved a Kappa of 0.27. Although the authors state that this level of agreement is fair, this interpretation may be misleading. Landis and Koch described a table by which Kappa can be understood(100). Their interpretation is captured in Table 5.

Table 4. Interpretation of Kappa scores	
KAPPA	STRENGTH OF AGREEMENT
0.00 - 0.20	Slight
0.21 - 0.40	Fair
0.41 - 0.60	Moderate
0.61 - 0.80	Substantial
0.81 - 1.00	Almost perfect

A more accurate interpretation is that the PRIME-MD has modest psychometric properties when using the test to identify mental illness, with its associated implications such as stigma, resource use and risk of medication side effect.

There is reasonable approximation between the pre 1990 studies and those undertaken post 1990 using the PRIME-MD listed above. There are, however, difficulties in generalizing the results of the PRIME-MD to New Zealand. Of the four studies using the PRIME-MD, three were based in the U.S.A. and included medical centres attached to hospitals. This is very different than what is accepted as general practice in New Zealand. There may also be cultural differences over the decision to present to a medical clinic between the study populations and the New Zealand population.

A New Zealand study by The MaGPIe Research Group on prevalence of psychological problems in primary health care found similar rates of disorder to the studies discussed above(101). Of those conditions that are directly comparable to the above data, the study indicated a 12 month period prevalence of depression to be 18.1%, anxiety to be 20.7% and alcohol abuse to be 10.4%. The 12 month prevalence for any DSM-IV diagnosable disorder was 35.7%. It can be concluded that prevalence of mental illness in New Zealand is similar to that found in overseas studies.

2.8.3 Approximating the burden of mental illness presenting to general practitioners in New Zealand

It is important to extract from the cumulated data an approximation of the burden of mental illness presenting to general practitioners in New Zealand. Although the data discussed above present a varied picture, an informed opinion can be made that accepts the variation in data yet assists in understanding the level of burden of mental illness presenting to general practice. The true prevalence of mental illness meeting 'caseness' in those presenting to general practitioners in New Zealand is likely to be somewhere between 20% and 50%. Of those presenting to general practitioners with a diagnosable mental illness according to DSM-IV criteria, close to two-thirds will have depression and close to one-third will have anxiety. For each case of depression 'caseness', there will be roughly equal number of those with subthreshold depression. For each case of anxiety meeting 'caseness', there will be roughly between one and two cases of subthreshold anxiety. It is likely that 2% will have an eating disorder and somewhere between 5% and 10% will abuse alcohol. Psychotic illness is rarely seen in general practice in comparison to disorders that have predominantly depressive symptoms or are characterised mainly by symptoms of anxiety. Clearly, there are limitations to the accuracy of these extrapolations. However, an informed opinion does provide useful baseline information.

2.9 DETECTION RATE OF MENTAL ILLNESS BY GENERAL PRACTITIONERS

It is useful to divide factors that influence the detection rate of mental illness between those under the control of general practitioners, those influenced by patient behaviour and those caused by the environment. These divisions are acknowledged as being somewhat artificial as the diagnostic process is dependent on all three. It is in the interest of clarity that the separate themes have been addressed independently.

2.9.1 Overall detection rate

A review of unrecognised mental illness in primary care was undertaken by Higgins(102). The criterion of a 'missed diagnosis' of a disorder was one that was identifiable by the DSM-III or DSM-III-R. Five papers in the review suggested that the detection rate was between 21 and 49%. Higgins quotes rates of between 21 and 66% but the higher number would appear to be artificially inflated. The data from the study suggesting 66% was based on four separate measurements longitudinally as to the acknowledgement of any psychiatric illness. Effectively, this was a cohort study whereas all other studies were surveys. The paper notes the difficulties in objectively assessing the physician's opinion where clinical documentation, interview and form completed by the physician are variably used. Difficulties also occur in comparing the physician's opinion with the diagnostic result from applying the DSM-III; some studies looked for exact correlation, others assumed that recognition of 'emotional disorder' was equivalent to recognising mental illness. Simply changing the criteria from specific to general diagnosis, the detection rate changes from 78 to 54%. The five research papers referred to by Higgins have been entered into table format as the first five lines of data. Added to this table are the findings of all papers in the WHO report described above that give data on detection rates by general practitioners and who used the same diagnostic system, the GHQ.

Table 5. Detection rates of mental illness by general practitioners				
PAPER	YEAR	COUNTRY	METHOD	DETECTION RATE IN %
Kessler et al[103]	1985	USA	GHQ	30
Jones et al[48]	1987	USA	GHQ	21
Von Korff et al[104]	1987	Various	GHQ	49
Borus et al[105]	1988	Various	GHQ	35
Goldberg et al[106]	1970	UK	GHQ	65
Goldberg et al[107]	1976	UK	GHQ	36
Chancellor et al[108]	1977	Australia	GHQ	14
Hoeper, et al[109]	1984	USA	GHQ	54
Bellantuono et al[110]	1987	Italy	GHQ	57-68
Boardman et al[111]	1987	UK	GHQ	35
Ormel et al[112]	1990	Netherlands	GHQ	26
Mari and Williams[113]	1984	Brazil	GHQ	26-71
Mari and Williams[114]	1986	Brazil	GHQ	70
Shamasundar et al[115]	1986	India	GHQ	25

As previously discussed, different versions of the GHQ behave in slightly different ways and several versions were used in these studies. A more recent Australian study used a different diagnostic tool, the SPHERE self reporting questionnaire, for 46,515 people attending 386 general practitioners(116). Although the SPHERE tool has had reasonably careful development(117), questions remain over its specificity(118). The overall detection rate was 44% of those identified as having mental illness using the SPHERE tool but was somewhat better with more serious mental conditions (54%).

A Japanese study on 112 patients attending a general practice, the agreement between the general practitioner and a diagnostic survey based on the ICPC-2 found moderate level of agreement (Kappa of 0.43)(119). However, the relatively low prevalence of depression (eight out of 112 were recognised by the instrument and eight by the general practitioners) in this study population would raise concern about the use of kappa as a statistical method as the low prevalence rate will affect kappa.

Accepting that there are variations in definition of detection, differences in how variations of the same tool behave, differences in cultural beliefs and patterns of obtaining health care, the likely range of detection is between 30 and 50% of all cases of mental illness attending a general practitioner.

2.9.2   General practitioner factors affecting the detection rate

The detection rate is dependent on a number of variables. It is also necessary to distinguish between the detection rate in comparison to 'caseness' as defined by a diagnostic tool such as DSM or ICD criteria or other diagnostic system.

2.9.2.1 Increasing level of distress increases the detection rate
A large US study examined the recognition rate in comparison to the presenting complaint(120). The detection rate when the presenting symptom was emotional distress was approximately 90%. If the presenting complaint was primarily physical, diagnostic or accident related, the detection rate fell to below 15%. It must be remembered, however, that the study was reported in 1969 and general practice understanding of the varied presentations of mental illness has developed considerably since then. The message in the study is still relevant; presentations of physical illness with underlying psychiatric pathology cause diagnostic difficulties for general practitioners. The MaGPIe group found that general practitioners used distress and disability as key features in presentations that may indicate the existence of mental illness (49).

2.9.2.2 Severity of mental illness is associated with higher sensitivity of diagnosis
Eight separate studies support the concept that increasing severity of symptoms is associated with increased detection:

1. A key study on this aspect of the work of a general practitioner emerged from the Hampshire Depression Project (121). The size of this study gives its results a sense of robustness absent from some of the much smaller studies with the performance of 152 general practitioners over 18,414 consultations being measured. The study compared the score on the Hospital Anxiety and Depression scale (a validated tool for screening in general practice) with probability of being diagnosed with depression. The outcome demonstrated a curvilinear relationship between the probability of a diagnosis of depression being made and the HAD score. Such findings allow a deeper understanding

of the implications of general practitioner behaviour. The paper suggests a HAD score of 8 or more is the criterion usually used to signify a diagnosis of depression. At this level, 65% of cases of depression were missed, a finding in line with other research. The sensitivity of diagnosis was 36.1% and the specificity was 91.5%. However, as the HAD score increases, the percentage of missed cases declines. The missed cases as a percentage of total screened at a HAD score of 8 or above was 12.9, the percentage at a HAD score of 14 and above was 0.86, a significant drop. The prevalence of cases with higher HAD scores was low. Other important findings of this study were an increased sensitivity to diagnosing depression for those either unemployed or temporarily out of work. A comment by the authors emphasises this point, "We have shown that the choice of threshold critically affects the recognition rate because of the diminishing prevalence of higher scores combined with increasing recognition, thus explaining the wide variations of previous estimates".

2. A retrospective record review of 186 elderly patients was undertaken for evidence of depressive symptoms(122). Subsequently, the Geriatric Depression Scale (GDS) was administered. Those with higher scores on the GDS were more likely to have depressive symptoms noted in the clinical record. At the standard GDS cut point of 4 there was no association between 'caseness' and a recorded diagnosis of depression. At a higher cut point of 6, there was a significant association between 'caseness' and a recorded diagnosis.

3. A further geriatric study by Garrard et al of 3,410 enrolled elderly in a managed care organisation compared scores in the GDS against recorded indications of depression in general practitioner case records(123). The indications were a diagnosis of depression, referral to a psychiatrist or a prescription for antidepressants. The table that describes the relationship between severity of score and likelihood of detection is reproduced from the paper in Figure 2.
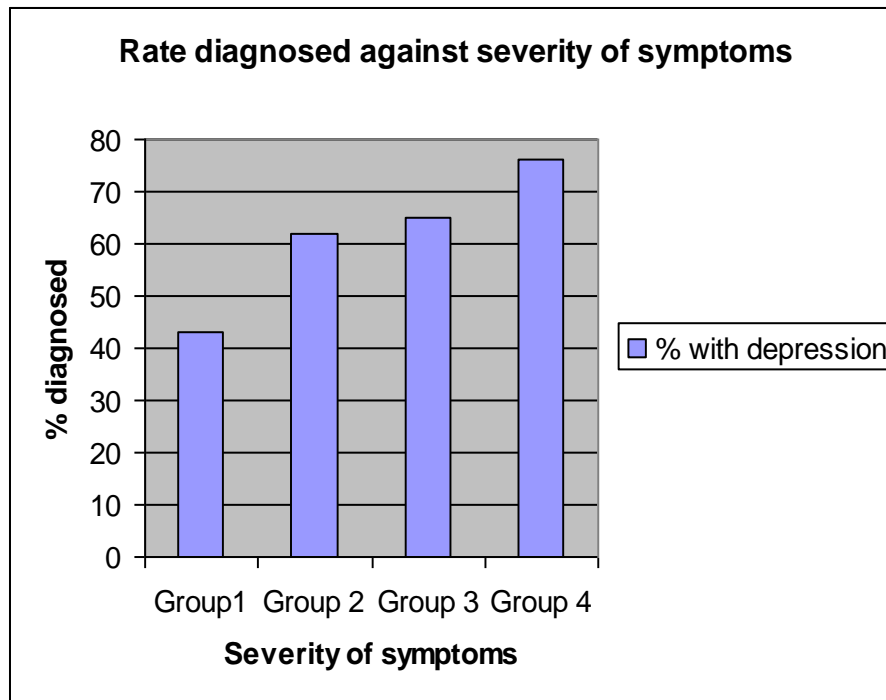
Figure 2. Increasing severity of symptoms and detection rate

Group 1 is GDS score between 11 and 15, Group 2 is GDS score between 16 and 20, Group 3 is a GDS score between 21 and 25, Group 4 is a GDS score of 26-30. Thus the detection rate climbs from 43% for mild depression to 76% for severe depression.

4. A study by Simon and Von Korff on recognition of psychological disorders found correlation between recognition rates and severity of symptoms and with the presenting complaint being psychological in nature(124). Diagnosis of psychological disorder was made using tools such as Composite International Diagnostic Interview and the General Health Questionnaire. Neither DSM nor ICD were used.

5. Another larger study by Coyne et al rated 1,580 patients using the Centre for Epidemiologic Studies Depression Scale and compared the results with the physician's impression as to whether the patient was depressed or not(125). A rating scale for severity of major depression was also used. Although only 32% of depressed patients were detected overall, a breakdown of rates of detection by severity of symptoms showed only 18% of those with mild symptoms were detected, 38% with moderate symptoms but 73% who had

severe symptoms were detected. The undetected group were characterised by having higher global functioning, less depressed mood and more energy.

6. A large multinational study of 948 patients with depression in primary care setting found that general practitioners were more likely to diagnose depression for those with more severe illness and greater disability(126) . In the study, 42% of those meeting ICD-10 requirements for depression were diagnosed by general practitioners correctly.

7. A Netherlands study that screened 1,271 consecutive primary care patients using the GHQ found 340 with psychological disorder and followed this group for 12 months(127). The authors concluded that higher initial severity of symptoms was associated with higher recognition rates by general practitioners. Further, those who were recognised had no improvement in outcome over those who were unrecognised.

Overall, there is robust evidence that links the severity of mental illness with increased rate of detection by general practitioners.

2.9.2.3 'Normalisation' of symptoms by general practitioners

The question of what general practitioners feel is important when assessing mental health issues is very relevant to this research. As would be expected, attitudes of general practitioners to mental illness are complex and context specific. For example, an English qualitative study of primary care professional involved in care for the elderly found concern amongst general practitioners that depression was a medicalisation of normal life events, particularly given the stage in life of their patients(128). The nurses interviewed held similar views as did the patients. In the context of life difficulties (living in elderly care institutions), the state of mind of their patients was considered normal. The methodology of this study was poor, however, with small numbers of participants drawn from a professional group with an interest in mental care of the elderly and all from the same region. No attempt had been made to test the generalisability of their findings to the wider health care community.

The belief that some mental illness represented medicalisation of normal life events was found in a qualitative study of 35 general practitioners in the north-west of England(129). This qualitative study used purposeful sampling to ensure representation from small and large practices and semi-structured interviews. The general practitioners expressed three somewhat conflicting views of depression; a

normal response to life events, a method of secondary gain (such as avoiding work) and a problem of interaction (impact of treating depression on the general practitioner). Unfortunately, the paper did not answer its research questions well; all conclusions were simply divided into those three categories with no attempt to tease out information that would have answered the aim of identifying "ways in which medical and moral judgements are woven together in primary care". However, finding that general practitioners hold the concept of depression as sometimes being medicalisation of life event supports the concept of over diagnosis (poor specificity) as a conceptual difficulty that general practitioners have with standard diagnostic schemata.

2.9.2.4 Previous history of mental illness increases likelihood of diagnosis
Klinkman et al undertook a very revealing study on major depression in primary care. The researchers compared a yes/no response of general practitioners with the yes/no results of a structured interview for DSM-III for 372 patients(130). The false positive group were significantly more likely to have a history of mental health problems or hospitalisation for mental health issues than the true negatives. The false positive group also exhibited significantly higher levels of distress and impairment than the true negative group.

2.9.2.5 Training in recognition of mental illness
A US study by Banazak found that 39% of general practitioners felt they had received 'good' education on late life depression, 41% felt their training was 'fair'(131). Over 75% felt they could recognise depression in the elderly patient and about 25% routinely used a screening tool to detect depression. Just over 70% believed they treated late life depression well. In view of the data concerning epidemiology of mental illness in general practice and the low overall detection rates, it would seem that general practitioners are overconfident in their ability to recognise and treat mental illness.

Uptake of guidelines overall by general practitioners is poor with one study finding that less than half of general practitioners reporting to use any guideline(132). Lack of face validity would seem to be the major reason for such poor uptake(133). Mental health guidelines fare no better than others. A survey of 992 general practitioners in the US with a 53% response rate found that 12 months after release of depression guidelines, only 33.6% were aware of them and 13% had a copy of the

guidelines(134). Although there is little research on training in mental illness general practitioners are exposed to, it would appear, from what little evidence that exists, that educational initiatives have been unsuccessful in meeting the needs of those with mental illness.

2.9.2.6 Profile of doctor

A study of general practitioner characteristics and their influence on the diagnostic rate of mental illness revealed that a low interest in mental illness and a conservative approach to intervention will adversely affect the detection rate of mental illness(135). This study is somewhat dated (1979) and will not reflect the considerable changes that have occurred in general practice concerning the attention that is given to issues of mental illness and patient centeredness.

The personality of the physician would also appear to influence the detection rate of mental illness. A study of 54 general practitioners revealed that high academic ability, self confidence and outgoing personality were associated with greater diagnostic sensitivity(136).

2.9.3 Patient factors that affect the diagnosis rate

2.9.3.1 'Normalising' patient behaviour reduces detection rate

Patient's beliefs about their illness can also impact on the ability of general practitioners to diagnose it. A cross-sectional survey in England of 305 general practice attenders found a marked difference in the rate of detection of depression and anxiety that was dependant on the self perceptions of the patient(137). The GHQ was used as the diagnostic tool. The overall detection rate was 36%. Those who presented with a 'normalising' understanding were detected at a rate of 15% while those who exhibited a psychologising style of presentation were detected at a rate of 62%. A critique of this paper pointed out the very low threshold used for 'caseness'; a score of 3 or more was considered positive. There is no evidence that treating those with such low scores for 'caseness' would be beneficial. The use of the GHQ as a diagnostic tool is also questionable. The validity of the tool would appear to be good(138) but there is rationale for using it as a screening test that precedes a more intensive interview(139).

Further research concerning the influence of a normalising attitude by patients was reported in a different paper(140). A 'normalising' attitude reduces the chances of detection of depression and anxiety from 36% to 25% whereas a psychologising

attitude increased the rate of diagnosis to 62%. Patient resistance to seeking help may also be a reaction to the perception that the disorder being experienced is self limiting (141).

2.9.3.2 Patients' beliefs on mental illness

As described by Cornford, Hill and Reilly, "Patients' views about depressive symptoms are significantly different from conventional medical views. A 'disease management approach' fits uncomfortably with patients' experiences"(142). Their work using 23 semi-structured interviews with primary care patients scoring positively on a standard depression rating scale revealed complex meanings to sufferers behind the term depression. A strong theme was that of being out of control. Many held beliefs about depression being caused by social problems. A variety of sometimes conflicting beliefs were held concerning antidepressant medication.

A series of New Zealand focus groups also supported the notion that those with mental disorder commonly believe that there was a social causative factor(143). Further, classification systems were seen as simply a tool available to health professionals. How this tool is used will decide the utility of the systems.

Commonly, depression presents as part of a multifaceted complex of problems. The extent of significant physical, social and psychological co morbidities in those with mental illness can be formidable. An Australian study revealed 57% childhood physical abuse and 40% childhood sexual abuse in those with major depression and 72% had a chronic physical condition(144). Anxiety, alcohol abuse and unemployment were common. The complexity of patient consultations also brings into question the concept of 'disease management' in general practice. It is thus unsurprising that many who are afflicted with mental illness seek understanding of their condition from historical events.

2.9.3.3 Patients' expectations of mental health services

Although there is an overall lack of research on patient expectations of psychiatric services, the available research provides some interesting insights:

1. An insightful qualitative New Zealand study on those making first contact with an eating disorders service found a dichotomy between patients perceptions of the therapeutic alliance and the treatments received(145). Of 276 open ended questionnaires sent, a 43% return rate was achieved. Overwhelmingly, the best reported feature of the service was the relationship

that emerged between patient and health care worker. The 'tools of the trade' of weighing, pressure to change behaviour or engage in new behaviours gained adverse comment. Loss of compensatory behaviours and forced assumption of responsibility also were adversely critiqued. Although this study was limited to eating disorders in a secondary service, the high value placed on the therapeutic alliance by patients is of interest.

Legitimate expectations of non-medical issues in mental health care have been put forward by the World Health Organisation(146). The tool was subsequently validated in a multinational study(147). The domains of expectation are dignity, autonomy, confidentiality, communication, prompt attention, social support, quality of basic amenities and choice. A German study across primary and secondary care of 312 mental health patients ranked importance of these domains separately for both ambulatory and hospital care(148). The ranking for those in ambulatory care was, in order of importance autonomy, communication, dignity, continuity, choice, quality of basic amenities, and confidentiality. The domain of 'Social support' was only measured for those receiving hospital care.

2. An Australian qualitative study on the experiences of those with mental illness working with mental care nurses explored attitudes and opinions on a collaborative approach to their health care(149). The results revealed a major focus on respect as a fundamental requirement for collaborative health care. Other important aspects of care were encouragement, collaboration and systemic barriers. The systemic barriers were system design faults that were independent of those working within the system.

3. A qualitative study on 15 high functioning survivors of mental illness found paternalistic and coercive treatment systems and indifferent professionals to be commonly encountered barriers to psychiatric recovery(150). Conversely, the participants believed that supportive relationships, meaningful activities and effective treatments (both traditional and alternative) were influential in facilitating recovery.

4. An American study found a catalogue of problems experienced by patients concerning the diagnosis of depression(151). These included late diagnosis, lack of adequate involvement in clinical decision making and inadequate information given. However, this qualitative study was small, with 15

participants and all were recruited from one of two centres. The data analysis included those with bipolar disease and active substance abuse. While the study is of interest, caution must be taken before generalising the results to New Zealand general practice.

5. The issue of outcomes desired for those presenting with emotional distress was studied in a perceptive research project in America(152). Of 403 distressed patients presenting, the majority felt it important that their doctor would try to assist. The majority desired counselling as therapy. There were differences between those with both presumptive depression (as diagnosed using a depression score) with distress and those with distress without depression as a presumptive diagnosis. Of those with mood disorder, 71% desired counselling, 33% desired medication and 5% wanted referral to a mental health specialist. Of those with distress, 62% desired counselling, 23% wanted medication and 11% desired referral to a mental health specialist.

6. Compliance with medication is, in the end, a patient choice. It is generally accepted that those treated for depression commonly have treatment durations less than what is recommended by guidelines. The consensus of advice is for duration of treatment to be at least 6 months(153). The relapse rate in those with less than 6 months therapy is high(154). A study of 272 patients in a general practice setting who met DSM-IV caseness for depression were followed for compliance with medication(155). A wide variety of medications were reported, the majority being SSRIs. The Kaplan-Meier survival plot revealed a fairly linear relationship between time and proportion who continued medication. Continuation rate was 0.88 at 4 weeks, 0.77 at 8 weeks, 0.68 at 12 weeks, 0.58 at 16 weeks, 0.52 at 20 weeks and at 26 weeks. Cited reasons for discontinuing medication were:

Table 6. Reasons for discontinuing antidepressant medication	
Reason for discontinuing	**% responding**
"Feeling better"	55
"Adverse events"	23
"Fear of drug dependence"	10
"Feeling uncomfortable taking drugs"	10
"Lack of efficacy"	10
"I have to solve my problems without drugs"	9
"My GENERAL PRACTITIONER told me to stop"	9

Respondents were allowed to give more than one reason for discontinuing. Overall, 76% of those enrolled in the study told their general practitioner that they were not continuing with medication. The rate of not informing the general practitioner varied considerably with the reason for discontinuing medication. Issues of self perception such as, "I have to solve my problems without drugs" were far less likely to be associated with informing the general practitioner than side effects or "Feeling better". The quality of the relationship with the general practitioner significantly and positively influenced the rate of informing the general practitioner about discontinuing the medication. The authors concluded: "The more a dropout reason could hurt doctors' self esteem, the lower the percentage of patients informing the doctors, and the more a dropout reason could please doctors, the higher the percentage of patient informing them". A defect of this study was a potential selection bias where general practitioners were involved in the selection process and could have chosen those who were more or less likely to 'last the distance'. The research does highlight the autonomous nature of patient decisions and the variable feedback on these decisions to the prescribing doctor. It also highlights the limited control over compliance that the prescribing doctor has in a general practice context.

7. The concerns that patients have with medication is partly answered by an English study on what do lay people think of depression and

antidepressants(156). Of 2,003 people surveyed, 91% believed those with depression should be offered counselling and 16% thought they should be offered antidepressants. Only 46% of people thought antidepressants to be effective and 30% thought antidepressants to be not at all effective or marginally effective. The belief that antidepressants are addictive was held by 78%. It is thus understandable that those with depression may enter a consultation with a general practitioner with a different knowledge set and different belief systems.

8. Compliance with medication is associated with gender and contextual determinants. Females are more likely to stop taking medication when there is significant improvement in family functioning. Males are more likely to stop taking medication when there is improvement in any disability that has been caused by the depressive illness(157).

2.9.3.4 Physical disease presentation reduces detection rate

Of further interest is data on what those with mental illness state as their stated reason for consulting. Ansseau et al reported on 2,316 patients with mental illness(95). The author's list the presenting complaints and the data is reproduced in Figure 3.
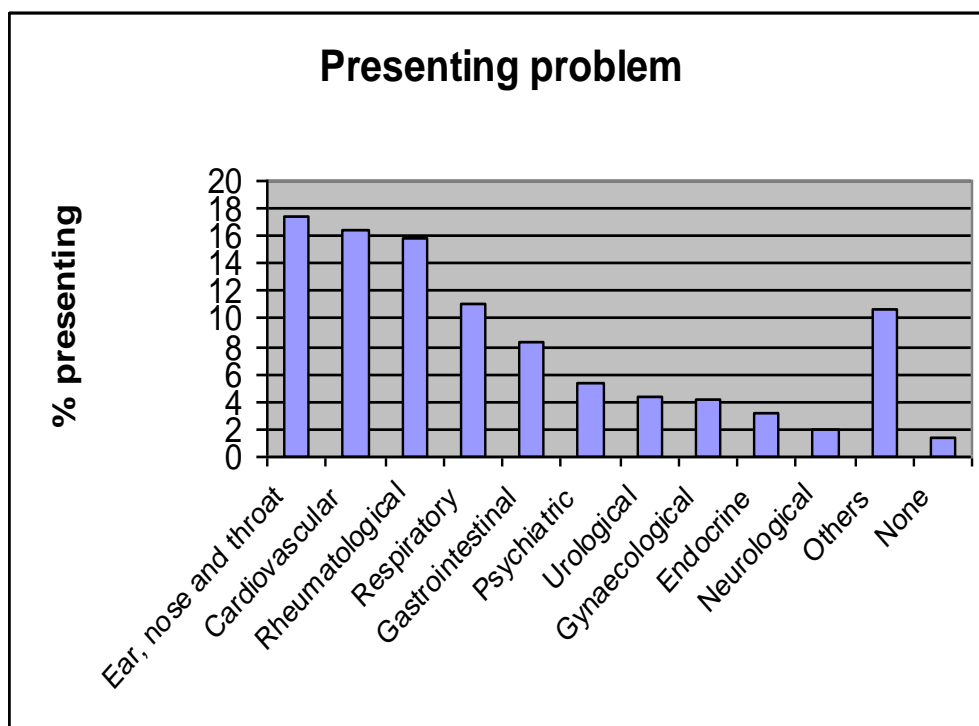
Figure 3. Presenting complaints for those with mental illness (taken from Ansseau M, Dierick M, Buntinkx F, Cnockaert P, De Smedt J, Van Den Haute M, et al. High prevalence of mental disorders in primary care. J Affect Disord. 2004;78(1):49-55)

Of particular note is that only 5.4% of those with mental illness present to the general practitioner with psychological or psychiatric symptoms as the main reason for consultation. The presentation of physical illness as the reason for an encounter with a general practitioner was noted 40 years ago (70). A large US study found that only 35% of patients with a psychiatric problem reported this problem to the physician as a primary complaint(158). The research also describes the rate of psychiatric diagnosis by presenting complaint. The authors provided these data in a table that is reproduced in Figure 4.
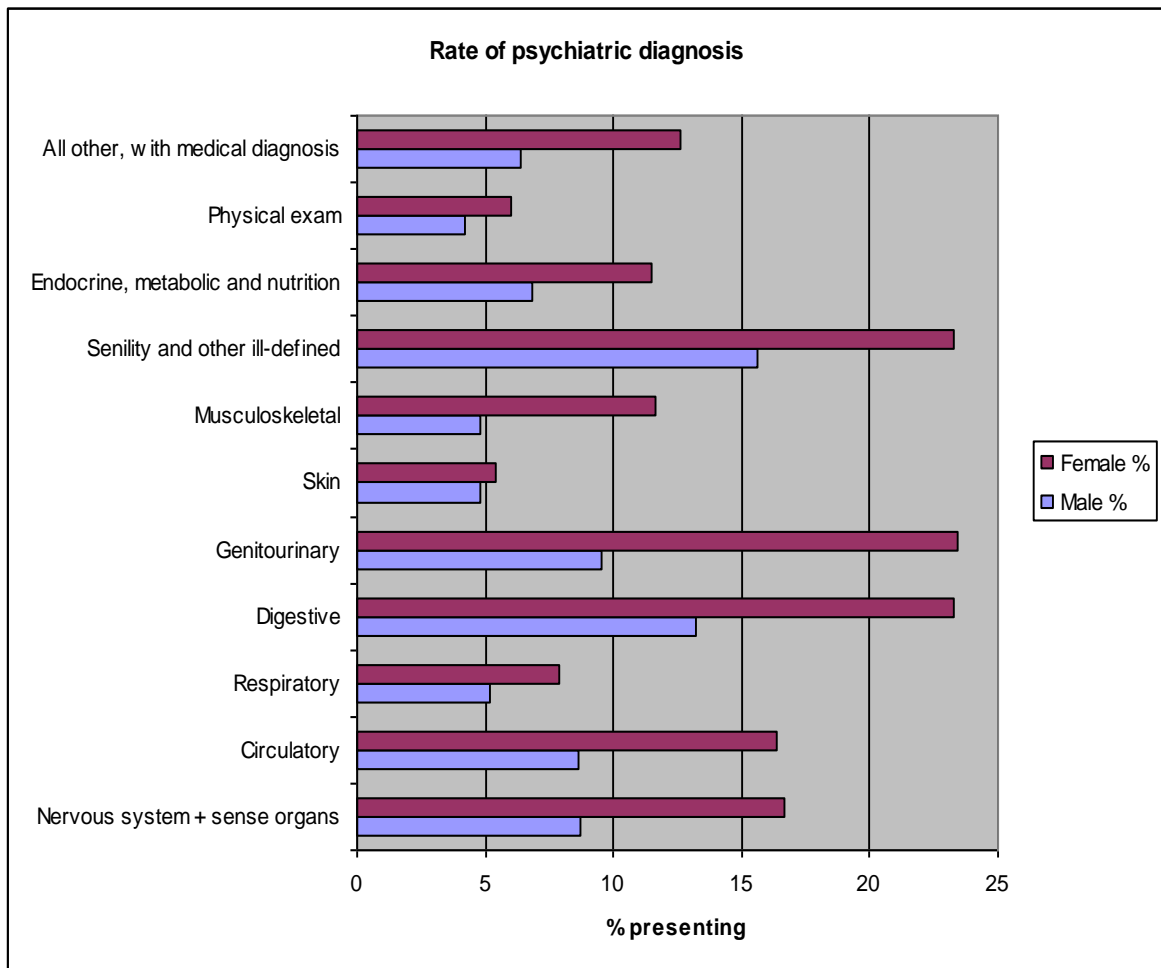
Figure 4. Rate of psychiatric diagnosis by presenting complaint (taken from Locke BZ, Gardner EA. Psychiatric disorders among the patients of general practitioners and internists. Public Health Rep. 1969;84(2):167-73)

Of note are the differences between female and male patients in how psychiatric disorder presents. For males, digestive problems and ill defined conditions predominate. For females, alongside digestive and ill defined conditions, genitourinary presentations are also common presenting conditions with underlying psychiatric diagnoses.

2.9.4 Combined factors

The interaction between a general practitioner and patient can be intricate. A study on physician perceptions on why patients failed to adhere to treatment regimes for treating major depression revealed that physicians accorded 76% of the weighting to patient factors(159). These included patient resistance, noncompliance with visits and high psychosocial burden. Physician factors accounted for 15% of weighting (physician judgement overruling guidelines) and system barriers for 9%. The study was somewhat compromised by including 12 doctors and six nurse care managers in the respondents. The sample was therefore non-homogeneous and no acknowledgement of the differing roles was made in the discussion. Two comments from the authors are worth repeating:

> This suggests that the barriers to delivering guideline-concordant care to many depressed patients are not likely to be overcome by simple physician-oriented interventions such as continuing medical education or performance feedback.

It was rare to find such insightful acknowledgement in the literature of the difficulties faced by general practitioners and patients in managing mental illness in contrast to the simplistic instructions to apply evidence based medicine as a solution to under-diagnosis and under-treatment. The authors also noted the wider context of medicines relationship to society, its impact on the consultation process and ultimately its influence on outcomes. "When we encourage patients to participate as full partners in their care process, we should expect that some will choose not to participate in a treatment strategy for a condition they may not be convinced they have." The workload of general practitioners is greater when issues of mental illness and/or psychosocial problems are raised in a consultation (160,161). Limited time in which to attend to matters that may be mental illness is therefore relevant.

2.9.4.1 Competing demands

Klinkman et al described a model that offers a framework for understanding the wider context in which patients make decisions regarding mental health care (162). The model:

> … suggests that patients and physicians bring an implicit agenda of
> issues to the primary care visit. Their interaction, modified by
> patient, physician, visit, and health system factors, results in attention
> to some problems with other problems left to subsequent visits if
> addressed at all.

There is increasing evidence that this model provides a useful method of understanding the complexities of patient choice and how such choice can and does influence both management and outcomes.

2.9.4.2 Multiple agenda items in the consultation

An important consideration in attitudes to mental illness is the complexity of the general practice consultation. Although an in-depth discussion of such a topic is beyond the scope of this research, it is clear that many separate problems are dealt with in the average general practice consultation and this is a feature of the 'competing demands' model. Beasley et al found an average of just over three problems being managed per general practice consultation based on diagnoses for billing a health funder (152). The number increased to 4.6 for those with diabetes. This accords well with previous research by Flocke et al where 2.7 problems were addressed on average (153). The attention that can be given to issues of depression is influenced by the number of concurrent medical problems. Rost et al found that chronic comorbidity significantly decreased the odds that physicians and untreated patients would discuss the likelihood of depression(163,164). An American study found that issues of depression and anxiety ranked seventh in the list of issues presented, behind hypertension and various respiratory infections but just above diabetes and acute musculoskeletal problems(165). A New Zealand study of consultations undertaken by a single general practitioner revealed a myriad of decision points throughout the consultations that are as much dependent on social prerogatives as medical ones(166). It is clear that the consultation represents a battleground of competing priorities where the agenda is jointly constructed between doctor and patient.

2.9.4.3 The practice environment

Qualitative research with general practitioners add to the concept of the practice environment influencing diagnosis(121). Although this paper by Chew-Graham et al

was mainly concerned with the role of the general practitioner in relation to mental illness, data were produced that allows some understanding of why mental illness is not recognised. Practice pressures (time constraints in particular), socio-cultural factors (the stigma of the label of mental illness), the medico-legal framework (more expensive insurance premiums for example) and the consultation itself as unique to general practice (having to prioritise more urgent physical problems over potential mild mental problems) were held by the general practitioners as being contributing factors to the under diagnosis of mental illness. The research did not explore resistance to the use of diagnostic schemata, however. An almost incidental statement made by researchers concerned the considerable difficulties that inner-city general practitioners had in obtaining any form of psychotherapy for their patients and the sense of deep frustration with this: "… doctors working in inner cities may be reluctant to recognise and respond to such patients in depth because of much wider structural and social factors, as well as their own emotional responses. These negative attributions mean that GENERAL PRACTITIONERs exhibit a pessimistic view of the possible outcomes of individual consultations"(p636).

A similar conclusion was reached by a study on general practitioners attitudes to mental illness by Dowrick et al(167). The original intention of the research was to test the existence of a link between confidence in identifying depression with performance in identifying depression. They also wished to measure the association between comfort with prescribing antidepressants with frequency of prescriptions rather than referral for psychotherapy. They found no association between confidence in identifying depression and performance. In explaining their results, the authors conclude: "… the identification of depression by GENERAL PRACTITIONERs is not an independent variable, but rather is dependent on certain other beliefs, attitudes and skills which GENERAL PRACTITIONERs possess to varying degrees, and inextricably linked to ability to manage depression"(p 418). The solution put forward is to increase general practitioners sense of therapeutic optimism and to equip them with skills and knowledge in a range of psychological processes. Although the solution offered has major logistical issues (no acknowledgement is made of the increased time commitment to offer psychotherapy and no cost benefit analysis was offered), the link between ability to manage depression and performance in identifying depression is of note. This acknowledgement of the context in which the general practitioner is working is a welcome change from the previous position where

a 'blame' culture implicated poor skills of general practitioners. For example, a consensus statement in the BMJ by Priest et al reported: "Primary care physicians fail to recognise approximately half of their patients suffering from depression. Recognition of patients with depression depends mainly on the interviewing skills of the physician" (148). By implication, the authors adversely criticise the interviewing skills of general practitioners as a cause of poor recognition of depression and ignored the wider context of the consultation.

2.9.4.4 Other variables

Other variables do affect the detection rate of mental illness in those who attend general practitioners, although the evidence is variable and conflicting. One study found lower detection rates in African Americans, males and those younger than 35 but increased rates for higher severity, coexisting diabetes or hypertension(168).

The consultation process has, of course, considerable influence on the outcome of someone attending a general practitioner. It would seem that for patients with principally psychological issues, interest, empathy and a continuing relationship are highly valued(169). Patients play an active role in the consultation; interpretation and evaluation of what the general practitioner says is quite individual. Of note is the comment in this research paper: "Patients particularly appreciated a shared decision-making approach".

Cost of seeking help with psychiatric illness and cost associated with therapy are important considerations. A large multinational study found financial considerations to be more of a barrier than issues of stigma(170). Clearly financial considerations are very system specific with health care subsidies a strong predictor of how much personal cost will affect care seeking behaviour. The study reasonably inferred from the data available that cost was a factor that was inversely correlated with rate of treatment.

2.10   PATTERNS OF CARE FOR THOSE WITH MENTAL ILLNESS

2.10.1 The clinical course of anxiety and depression in general practice

A recent review of observational studies of depression in the general practice setting revealed limited studies, many of which had significant design flaws(171). Of the 17 longitudinal studies available for analysis, just over half used DSM-IV criteria for diagnosis while the remainder studied symptom severity. Length of follow-up was

between 20 weeks and 3.5 years. Sampling was via consecutive attenders or convenience. No studies reported random sampling. Other discrepancies between studies were in inclusion criteria, exclusion criteria, baseline measurement instruments and descriptive characteristics of the enrolled population to the general population. Accepting these limitations, some indications of the natural history of depression in the general practice setting can be drawn from these papers. The more relevant papers will be discussed in some detail as well as other pertinent papers.

1. A study of 476 patients all of whom met DSM-III criteria for major depression and attending 560 randomly selected general practitioners were followed for a maximum of 6 months (172). Treatment choice was left to the general practitioners discretion. Over one-third of enrolled subjects had a history of a previous depressive episode. At 6 months, 65% had resolution of depression, 25% developed a chronic disorder and 10% had an early relapse after initial improvement.

2. A study on both anxiety and depression enrolled 148 people of which equal numbers (by chance) had anxiety and depression (173). Usual general practitioner treatment continued unchanged. At six months, 58% of those with depression showed significant improvement according to the Hamilton Depression Rating Scale and 49% of those with anxiety. Several flaws are evident in this study including the high drop out rate of 19% as well as the higher rate of alcohol related disorders and lower GHQ scores in the drop out group.

3. A 12 month study on 162 people selected by random phone calls using a screening tool for depression and a follow-up interview found that 64% of those with depression attended a general practitioner over a 6 month period after enrolment (174). Of these 67% were detected during the 12 months after enrolment. Of those detected, 75% had significant symptoms at 6 months dropping to 61% at 12 months. The undetected group demonstrated similar outcomes where just over 50% met criteria for depression at 6 and 12 months (the authors did not supply the detailed percentages). The paper, while criticising poor performance of general practitioners and suggesting that screening could be efficacious in general practice, failed to adequately discuss or explain the somewhat disappointing outcomes of treatment of depression.

4. A large multinational observational study of 968 patients with depression meeting DSM-IV criteria reported follow-up at 9 and 12 months with 87% and 85% respectively available for assessment (175). Usual cares were left uninfluenced by the study. At 9 months, 36% had persisting depression, 29% had partial remission and 35% full remission. Curiously, the corresponding data at 12 months follow-up was not given.

5. A second large observational multinational study by the same lead author as the previously discussed paper followed up 1,117 patients with depression and reported results at 3 and 9 months (176). The general practitioners involved in care of the patients were informed of the diagnosis but no management interventions or advice was offered apart from usual general practice cares. There was wide discrepancy in use of antidepressant treatment, ranging from zero % in Russia to 38% in the US.

6. Of 725 depressed patients by ICD-10 criteria who were followed for 12 months, 33.5% met criteria for depression at the termination of the study (177). No changes were made to usual cares. Unemployment, low educational status and those without partners were statistically more likely to be depressed at 12 months. The risk ratio of having depression at 12 months follow-up was 1.4.

7. Those with coexistent anxiety with depression are more likely to have depression at 12 months (178). This small study of 85 depressed patients compared those with coexistent anxiety with those who had depression alone.

8. A study on the clinical course of minor depression compared asymptomatic patients (n=72) with those having major depression (n=66) and those with minor depression (n=75) over 3, 6, 9 and 12 months (179). The pertinent results regarding the clinical outcome are presented in Table 7.

Table 7. Twelve month outcome for variable severity of depression				
		Diagnosis at 12 months		
Initial diagnosis	**Numbers**	**Asymptomatic**	**Minor depression**	**Major depression**
Asymptomatic	72	66 (98.5%)	1 (1.5%)	0 (0%)
Minor depression	75	37 (56.1%)	16 (24.2%)	13 (19.7%)
Major depression	66	19 (37.3%)	11 (21.6%)	21 (41.1%)

Of interest is the very low numbers of those who were asymptomatic who went on to have significant depressive symptoms at 12 months. A little over half of those with minor depression were asymptomatic at 12 months but 24% still had minor depression and almost 20% had major depression. Close to half of those with a diagnosis of major depression at baseline still had major depression at 12 months and only 37% were asymptomatic. The severity of impairment of those with minor depression was close to, but not quite as severe, as those with major depression.

9. A three year follow-up of 88 patients with depression or anxiety in England revealed that while only 39% were diagnosed at first consultation, the percentage diagnosed during the 3 years was 63% (180). A further 18% no longer met caseness leaving 18% who were both undiagnosed and still had depressive symptoms or symptoms of anxiety. The authors did concede that the numbers in the study were low.

10. A large multicentre study, previously referred to, by Simon et al of 948 patients with depression followed their clinical course for 12 months (118). Although 42% were diagnosed correctly by a general practitioner, the outcome at 12 months was not statistically different between the recognised and unrecognised groups. Recognition was not a significant predictor of improvement at 12 months. Over half of those with unrecognised severe depression at baseline no longer met criteria for major depression at 12 months.

In these studies, it is difficult to separate the influence of different methods of measuring symptoms and diagnoses from the effects of the disorders. Accepting these limitations, it is still possible to draw some conclusions. A significant number, somewhere around 50-60% of those with depression, either minor or major, will no longer meet criteria for depression at 12 months. Recognition of depression and treatment of depression would seem to have some, but minor influence on this figure. The recognition rate of general practitioners increases moderately when those with depression re-present. Social factors and coexistent anxiety reduce the remission rate of depression.

2.10.2 Who is treating mental illness?

There is robust research that suggests a significant number of those with mental illness see general practitioners and are treated by general practitioners without reference to secondary care. A large multicentre US study of almost 10,000 persons aged 18 years and over found that of those with diagnosable mental illness, between 76% and 62% of ambulatory visits were to generalists rather than specialists (181). An analysis of office based visits in the US revealed 9.8 million visits by older people for depression between 2001 and 2002 (182). Of these, 64% were to general practitioners. Similarly, an analysis of ambulatory presentations for anxiety in the US revealed 12.3 million visits for anxiety in 1985-1998 of which 48% were to general practitioners (183).

Goldberg gives a useful indication of where mental illness is seen, diagnosed and treated (141). The data set used was collected from two USA cities (Seattle and Washington) and two European cities (Manchester in England and Groningen in the Netherlands). Goldberg defined Level 1 as all adults who experience a mental disorder over the course of one year. Level 2 represents all adults who experience an episode of mental disorder and seek help from a primary care physician. Level 3 represents all adults who are considered mentally disordered by their primary care physician regardless of satisfying research criteria. Level 4 are all adults treated by mental health services during the course of one year. The results are reproduced in Table 8

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Table 8. Location of care for mental illness (taken from Goldberg D. Epidemiology of mental disorders in primary care settings. Epidemiol Rev. 1995;17(1):182-90)			
Location of care	**England**	**The Netherlands**	**U.S.A.**
Community	250-310	250-303	221-281
Primary care total	210-230	224	164
Primary care detected	101	94	78
Secondary services total	20.8	34	58
Inpatients	3.4	10	9

Of particular interest is the rate that those with mental illness as diagnosed by their primary care physician will appear in secondary care. In Manchester, the rate was 20%, in Groningen the rate was 36% and in Seattle and Washington combined the rate was 71%. It is likely that the New Zealand rate would approximate the Manchester and Groningen rates of approximately 30%.

2.11   THE DECISION TO PRESCRIBE

In view of the likely poor uptake of diagnostic coding or systems in general practice, the question as to what criteria are used to prescribe psychotropic medications is of relevance. A qualitative study undertaken in England of 27 general practitioners, each from a different practice, participated in one of five semi-structured focus groups (184). The findings were that time constraints and availability of ancillary services such as counselling does increase the likelihood of prescribing an antidepressant for depression. The general practitioners expressed discomfort with prescribing for what they felt were self limiting psychological distress. Although there was awareness of the difficulties of distinguishing between distress, depression and social misery, persistent symptoms would warrant a prescription regardless of cause. Patient attitudes, cost considerations and a professional culture that reinforced prescribing also influenced decisions.

Further information concerning why general practitioners prescribe antidepressants comes from an observational study in England of 17 general practitioners who saw 694 depressed patients diagnosed by the Hospital Anxiety and Depression Scale (185). Greater perceived severity of depression increased likelihood of prescription. If patient attitudes were perceived to be positive, this also correlated

well with the offer of a prescription for antidepressants. A study of 439 consecutive attenders to general practice who were given a diagnosis of depression, anxiety or depression with anxiety by their general practitioners revealed increasing severity of symptoms and male gender were associated with increased rate of intervention (186).

2.12   SUBTHRESHOLD DISORDERS

Those disorders of mental health that do not reach 'caseness' but yet are of relevance to either patient, doctor or other interested party have become the focus of significant research over the last 15 years. These disorders are of particular import to general practice as many of those with such symptoms will be seen and managed by general practitioners alone. Although the term 'subthreshold disorder' usually refers to mild or moderate depressive symptoms that do not meet the criteria for major depression, the anxiety disorders similarly are associated with a subset that does not meet 'caseness' (187). Subthreshold disorders represent the 'grey area' of psychiatric conditions; those where there is uncertainty in diagnosis and management. The management of those with severe mental illness in general practice almost always includes the involvement of psychiatric specialists in deciding both diagnosis and treatment. The 'grey area' is commonly managed entirely by general practitioners yet attracts attention from those outside the discipline of general practice.

2.12.1 Defining subthreshold disorders

The literature review for this project found many references to subthreshold disorders. Although it was difficult to find explicit information, it is apparent that 'minor depression', 'subsyndromal depression' and 'subthreshold depression' are terms that are commonly used interchangeably. A recent review article criticised the confusion that the terminology causes for psychiatry in general (188). Although early research articles could be excused for using terminology without shared meaning, a 2002 paper by some of the most prominent researchers in this field referred to subsyndromal disorders and minor disorders as being conceptually different (189).

2.12.1.1 Subthreshold depression

How subthreshold depression may fit within the wider constellation of depressive illness was also described in the review paper by Cuijpers Smit and van Straten (188). One definition is that the term represents part of the continuum between having no symptoms and having major depression. Another concept is that it represents a unique

category alongside other depressive disorders. The third concept is that subthreshold depression represents either the prodrome of, or recovery from, major depression.

2.12.1.2 Minor depression

Minor depression has had greater focus and therefore better definitions regarding its borders. Rapaport et al comment on the definition: "The term 'minor depression' has been used to describe depressive conditions that are not of sufficient severity and duration to meet criteria for a major depressive episode" (190). The DSM-IV does not define minor depression but proposes it as a diagnostic criteria fulfilled by meeting two out of four symptoms of depression lasting at least 2 weeks and excluding those with a previous history of major depression. The paper by Rapaport et al on minor depression describes a cohort study of 226 subjects meeting the criteria of minor depression. They conclude that the symptoms are stable (at least over the 4 week study period), is disabling and commonly occurs in the context of a previous major depressive episode (32% of those with minor depression had a history of major depression). This study had some significant flaws. The DSM-IV criteria for minor depression specifically excludes those with a previous history of major depression, yet 32% of the study group had such a past history. 28% of those who entered the study dropped out including five who developed major depression and 14 who no longer met the criteria for minor depression. The methodological flaws of this paper reduce the usefulness of the results.

2.12.1.3 Subsyndromal depression

Although various definitions of subsyndromal depression have been used, Judd gives a definition that has been used by others researching in this field as at least two or more current depressive symptoms, present for most or all of the time, lasting for at least 2 weeks, in individuals who did not meet criteria for major depression, minor depression or dysthymia (191). This definition was based on earlier work by the same lead author that listed the symptoms together with the frequency of occurrence as listed (192).

Table 9. Symptoms found in subsyndromal depression	
Symptom	**% with symptom**
Sleep disturbance	34
Tired all the time	23
Thought a lot about death	23
Feeling sad, blue or depressed	12
Increased appetite	10
Less interest in sex	9
Difficulty concentrating	9
Sleeping too much	9

2.12.1.4 Dysthymia

The common definition of dysthymia is a chronic depressive disorder characterised by functional impairment and at least two years of depressive symptoms. Although the symptoms are defined as mild, they are otherwise almost identical to major depression.

2.12.1.5 Other subthreshold disorders

In a review of subthreshold disorders and their relevance to primary care, Rucci et al comments on the wide nature of these disorders (193). As well as anxiety and depression, obsessive-compulsive disorder, panic disorder, social phobia and somatoform disorder have all now been described as having a subthreshold version. The authors then discuss a study of 554 people in primary care and concluded that 29.4% had an ICD-10 diagnosable mental illness and 30% met criteria for one of the subthreshold disorders.

2.12.2 Relevance of subthreshold disorders

2.12.2.1 Prevalence

The prevalence of subsyndromal depression is probably between 8 and 13% per year in the general population (194,195). The above studies on the epidemiology of mental illness in general practice refers to minor depression as a measured category of the PRIME-MD diagnostic system. Of the available four studies, listed in Table 3, the prevalence of minor depression was 4.4%, 6%, 8.9% and 10.4% of those attending a

general practitioner. Similarly, although the diagnostic term 'Generalised Anxiety' was used, another category of 'Other anxiety' was used. The prevalence of 'Other anxiety' was between 8.7 and 11.4%.

2.12.2.2 Social burden of subthreshold disorders

There is evidence that subthreshold/subsyndromal/minor depression is associated with measurable impairment in daily function and distress. An important 2004 paper (196) by Judd et al focusing on treatment of minor depression quoted four references to support their perception that subthreshold depression has significant psychosocial implications and therefore treatment is commonly indicated. These will be reviewed in some detail alongside other evidence of impairment in social function due to minor depression.

1. The most influential of these papers (by the same lead author) divided 2,393 subjects between three groups; those with major depression, those with subthreshold depression and those without depressive symptoms (183). Subthreshold depression was defined as at least 2 weeks of two or more depressive symptoms that were present for most of the time. They note the most common symptoms were fatigue, insomnia and recurrent thoughts of death. Subjects then completed a comprehensive questionnaire that covered a wide range of social functioning. Some, but not all, of the 10 questions were based on existing validated scales. Others seemed to be selected without robust justification. As an example, the domain "Major financial loss in the previous 6 months" was given the criteria "This domain was scored present if one or more of the following five items occurred during the last 6 months; job loss, someone important to the respondent was out of work for 1 month or more, loss of home or anything else important, or the financial situation of someone the respondent depended on got much worse". No justification was given for selecting these criteria. Of the 10 domains, six would seem to have no validation. There were some unusual conclusions from this study. The authors reported finding no large consistent differences in impairment in the domains of function between those with subthreshold depression and major depression. This does not accord well with one of the assumptions of the study that implied there would be a gradation of severity of dysfunction between the three groups. There was no attempt to separate domains that may have been

consequential; major financial stress, for example, may well cause a range of symptoms that include many of the domains measured such as 'High household strain' or 'High social irritability'.

2. The second article by Kessler et al reviews previous work rather than presenting new findings on subthreshold disorders (197). There is little mention of disability as a consequence of minor depression. However, it does place subsyndromal depression within the context of representing prodromal or residual symptoms of major depressive disorder. Further, the paper strongly supports the dimensional rather than categorical nature of depressive illness.

3. The third paper, an exploratory study on economic costs and benefits of treating both depression and subthreshold depression by Wells et al came to the conclusion that "Despite lack of efficacy for treatments of subthreshold depression, disease management programs that support clinical care decisions over time for patients with subthreshold depression or depressive disorder can yield cost-effectiveness ratios comparable to those of widely adopted medical therapies" (198). However, the study also reveals no statistical difference of intervention using criteria of reduced depression burden days, days of lost work or QUALYs. There was weak evidence of increased health care costs in both depressed and subthreshold depressed groups.

4. The fourth study by Goldney et al was undertaken in Australia and used a variety of tools to compare the functioning of those with subsyndromal depression with those experiencing major depression (199). The study was robust, defined subsyndromal depression as "two or more simultaneous symptoms of depression, present for most or all of the time, at least 2 weeks in duration, associated with evidence of social dysfunction, occurring in individuals who do not meet criteria for diagnoses of minor depression, major depression, and/or dysthymia" with objective measures of outcome. The conclusions were greater use of health services than those with no depression, greater number of days off work and significantly lower scores on the SF-36.

5. The fifth study measured disability in 54 elderly patients with subthreshold disorder (200). However, the definition of subthreshold disorder was symptoms that did not meet those of minor depression as defined by the DSM-IV but who tested positive (score greater than two) in the GHQ. This may introduce an arbitrary element in defining subthreshold disorder as Jackson

defines 'caseness' for psychiatric disease as representing a score of three or more (201).

It is apparent that despite a reasonable number of publications concerning the social burden of subthreshold depression, little substantial evidence exists for claiming that it poses a major burden in terms of disability or distress to those who suffer from it.

2.12.2.2 Subthreshold disorder as a risk factor for major depression

The notion that subthreshold depression is a risk factor for major depression was the subject of a review article (202). A total of 23 papers describing 43,198 patients of which 6,049 had subsyndromal depression met the conditions for analysis. The results of this review were ambiguous. Of the 23 papers, 16 indicated an increased risk of developing major depression. However, the definitions of subthreshold disorder varied from study to study with some using the definition of minor depression as defined in the DSM-IV while others use one symptom or high self rating. The duration of follow-up was also variable from 1 year to 15 years as was the period in which the emergence of major depression was considered of interest. The authors state that the term subthreshold depression is unhelpful in researching mental illness due to these flaws. It would appear that those with subthreshold disorders are slightly more likely to develop major depression later in life. Further or more robust conclusions cannot reasonably be made on the data available.

2.12.2.3 Treating subthreshold depression

Research prior to 2002 was well described by a review paper by Oxman and Sengupta (203). They noted the paucity of robust research on minor depression. Using the definition of minor depression provided by the DSM-IV, they provide a breakdown of the seven randomised controlled trials where confidence intervals were available. The studies used a range of interventions; SSRIs, problem solving therapy (PST), counselling, tricyclic antidepressants and intense physical activity.

Table 10. Results of treating subsyndromal depression (taken from Oxman TE, Sengupta A. Treatment of minor depression. Am J Geriatr Psychiatry. 2002;10(3):256-64)	
TREATMENT	**CONFIDANCE INTERVALS**
Usual care compared to psychiatrist intervention with antidepressant and education	(-0.25) - (0.09)
Problem solving therapy compared to placebo	(-0.24) – (0.14)
Paroxetine compared to placebo	(-0.29) – (0.2)
Problem solving therapy compared to placebo	(-0.24) – (0.24)
Paroxetine compared to placebo	(-0.15) – (0.23)
Psychologist intervention with antidepressant compared to usual care	(-0.06) – (0.35)
Atypical antidepressant (isocarboxazid) compared to placebo	(- 0.19) – (0.47)
Interpersonal counselling compared to usual care	(0.02) – (0.5)
Intensive physical activity compared to education	(0.02) – (0.93)

The authors comment that the largest effect sizes came from non-pharmacological interventions. The message of this paper is that the disorder is poorly researched and there is little in the way of robust and consistent data to inform therapeutic decisions. It would seem, however, that medication offers no advantage over other modalities of treatment. More recent papers on treating subthreshold depression will be presented below.

2.12.2.4 Psychological treatment for subthreshold depression
The 2007 article by Wells et al quoted above (198) describes a meta-analysis of psychological treatment for subthreshold depression and concludes that a) psychological therapy significantly reduces symptoms in comparison to a control group and b) there was a reduced risk of developing major depression in the intervention group. The terms subthreshold disorder and minor depression were equated. A flaw in this report is that the assumption that there is reduced risk of development of major depression as a result of treatment, however the quoted p value is 0.07. A second flaw in the conclusions is the relative inattention to the effect of time on the differences in depressive symptomatology. The analysis used (d) values of mean effect size with 0.56-1.2 being large, 0.33-0.55 being moderate and less than 0.33 being small. Although the immediate post test value was 0.42 indicating moderate effect, the result at 6 months was 0.17 and at 12 months 0.16 indicating

small effect. It can be concluded that the effectiveness of psychological treatments for subthreshold/subsyndromal/minor depression is, at best, arguable.

2.12.2.5 Pharmacological treatment for minor depression
There is limited direct research on pharmacological treatment of minor depression or subthreshold depression.

1. Wells et al compared medication against usual care in subthreshold depression and found no significant gains in days of depression burden, days of employment, quality of life adjusted years (198).

2. Paykel studied the effect of amitryptiline on 141 depressives in the community who were regarded by their general practitioner as requiring treatment for depression but did not require secondary care opinion (204). Although the dose of amitryptiline varied from patient to patient according to tolerance of medication, the mean dose was 119mg by the 4th week. The findings (summarised in Table 11) did not support the contention that pharmacological treatment with amitryptiline in subthreshold depression was of therapeutic value.

Table11. Results of treating subsyndromal depression with amyitriptiline		
INITIAL SCORE	**6 week treatment arm**	**6 week placebo arm**
6-12	7.49	7.01
13-15	5.47	9.20
16-24	3.94	9.25

3. Williams et al, in a randomised controlled trial, treated 204 elderly patients with minor depression meeting described DSM-IV criteria and found paroxetine significantly improved symptoms over placebo (205).

4. Szegedi et al compared paroxetine with maprotiline in treating minor depression and found almost equal improvement in symptoms with both (206). Paroxetine did seem to have some significant benefits to maprotiline at the later stages of the 6 week study. The study measured the number of subjects who experienced a reduction of 50% or more in the HAMD-17 rating scale. Of note, however, is the lack of a true control where medication is compared to placebo.

5. Judd et al conducted a randomised double blinded study comparing fluoxetine with placebo in 162 patients with minor depression over 12 weeks (207). This paper was methodologically more robust than others due to careful attention to diagnostic criteria and the use of placebo control. There were 81 subjects in each arm of the study. The authors carefully defined the criteria used to diagnose minor depression. A variety of tools were used to gauge change in symptoms; overall depression severity was followed using Beck Depression Inventory, Hamilton Depression Rating Scale and Inventory of Depressive Symptomatology Score, whereas psychosocial functioning was measured with the Global Assessment of Functioning, Short Form 36. The Clinical Global Impression score was also monitored. The results indicated that depression severity improved in all methods of measurement, there was no significant change in psychosocial functioning. There was significant improvement in overall severity in illness. The authors comment that many tools used may not be valid for minor depression as they were designed and trialled in those with major depression.

6. A cohort study on 138 elderly patients were randomised to sertraline or citalopram for 12 months (208). Although this study found that both arms of the study demonstrated significant improvements in a range of tests (Hamilton Rating Scale, Geriatric Depression Scale, Global Assessment of Functioning, Wechsler Memory Scale, Mini-Mental State, Trail Making and verbal fluency), there was no placebo arm. Because of lack of data concerning the long term outcomes of untreated minor depression and the lack of a placebo arm to this study, the results are difficult to interpret.

A brief review article focusing on progress in psychiatry summed up the state of knowledge regarding subthreshold depression:

> A widening body of literature continues to demonstrate that DSD is a valid focus of psychiatric research as both a consequence of past MDD and a risk factor for future MDD. Tests of pharmacologic and psychosocial treatments for this condition show promise, but the development of a consensus about diagnosis of DSD and ways to measure severity of DSD are critical to future research" (209).

At best, the evidence justifying pharmacological treatment of those with minor depression is scant.

2.12.3 Relationship between subthreshold depression and major depression

Although the theoretical underpinnings of diagnosis in psychiatry hold to categorical imperatives, the relationship between major depression and subthreshold disorders requires some flexibility of this notion. Fraguas et al studied 557 patients of 19 general practitioners using the PRIME-MD tool and compared the results of general practitioners detection of symptoms with the SCID (210). Figure 5 shows the distribution of symptoms detected by the PRIME-MD tool. Figure 6 shows the distribution of symptoms detected by general practitioners using the SCID. The 'Y' axis is the percentage of patients of the 557 subjects.
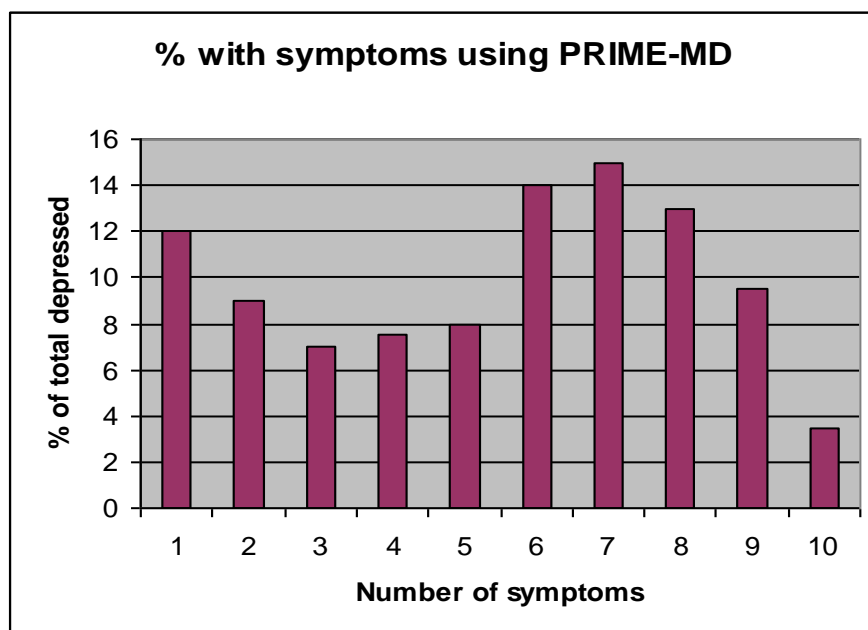
Figure 5. Distribution of symptoms according to the PRIME-MD tool
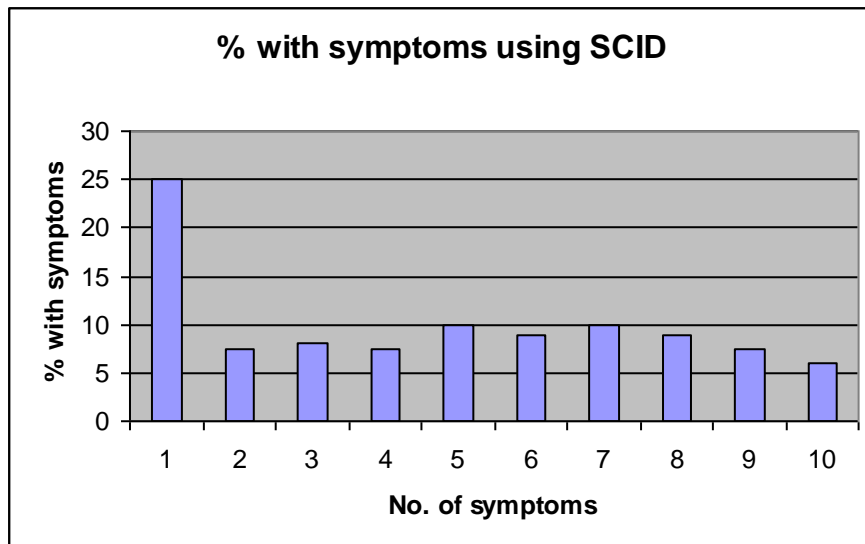
Figure 6. Distribution of symptoms according to the SCID tool

What is immediately notable is the reasonably consistent distribution of number of symptoms using either tool. This strongly supports the notion that categorical classifications do not reflect the reality of depressive symptomatology. Similarly, Judd et al found that the degree of symptomatology in those with depression varied over time between minor depression, subthreshold depression and major depression (211). It would appear that patients with these conditions move fluidly from one subcategory to another and have variable response to pharmacological and narrative therapies according to severity of symptoms as well as a number of other variables that include their unique belief systems regarding mental illness.

2.12.4 Relationship between anxiety and depression

The link between symptoms of anxiety and symptoms of depression is well known (212). Those with depressive symptoms are more likely to have comorbid anxiety symptoms and vice versa (213). The results of this study also revealed that comorbid occurrences of anxiety and depression are more common than pure cases of either. For those with subthreshold anxiety, 70% had coexistent subthreshold or major depression. For those with threshold anxiety, 80% had either subthreshold or major depression.

2.12.5 Critique of subthreshold/subsyndromal/minor depression

Pinkus et al summarised the position of subthreshold/subsyndromal/minor depression in a paper "Subthreshold mental disorders: A review and synthesis of studies on minor depression and other 'brand names'" (214). The title of the paper is provocative as is its message. As an example, the authors state: "The minimum number of symptoms required for a diagnosis of one of the subthreshold conditions ranged anywhere from one to six, although the most common minimum was two". The authors emphasise the myriad of names and variability of definitions as hindering understanding of the relevant issues as well as the lack of longitudinal studies and the lack of appreciation of the difference between patient and researcher definitions of the term 'clinically significant'. A comment from the paper is worth emphasising: "However, by simply breaking down syndromes into more elemental subsets of criteria, there may be an accelerated trend towards medicalising and pathologising conditions that may be within the normal spectrum". The paper also provides a useful method of understanding those aspects of mental disorder that are obvious and blind to each group of psychiatrists and general practitioners. Figure 7 is interpreted from the paper.

	Identified by G.P.	
	⊕	⊖
⊕	**Quadrant 1.** Shared understanding between GENERAL PRACTITIONER and psychiatrist over 'caseness'	**Quadrant 2.** Low detection rate by GENERAL PRACTITIONERs → missed opportunity for intervention
⊖	**Quadrant 3.** Distress and/or disability that does not meet 'caseness'	**Quadrant 4.** Shared understanding between GENERAL PRACTITIONER and psychiatrist on

Identified by psychiatrists/ schemata

Figure 7. Differences between general practitioners and psychiatrists

It is quadrants 2 and 3 that are the origin of much of the tension between specialty psychiatry and general practice; general practitioners not recognising those who have 'caseness' by DSM criteria and treating with psychotropics or referring to specialty services those who have no diagnosable psychiatric illness. General practitioners, on the other hand, clearly see mental health conditions that they consider should have treatment, yet which are not recognised by mental health services and therefore have little or no funding, disappointing results from referral and a pragmatic, rather than an evidence based approach to management.

Schotte and Cooper also criticised the objectives of developing sub-groupings to standard psychiatric criteria (215). Their paper contends that the development of categories to compensate for deficiencies in DSM and ICD classification systems is laudable. However, they also point out that simply lowering operational thresholds in these systems without careful attention to clinical and psychosocial aspects of new classifications that occur within the context where they will be used is inadvisable.

2.12.6 Authorship of research papers

The literature reviewed regarding subsyndromal/subthreshold depression and minor depression revealed interesting authorship patterns. Five researchers (L Judd, M Rapaport, H Akiskal, G Sherbourne and K Wells) authored or co-authored the majority of papers on these topics. Detailed reading of the research output found worrying flaws in some of these papers, particularly concerning negative findings that were not brought through to the conclusions of the research. In one of the papers "The prevalence, clinical relevance, and public health significance of subthreshold depressions" for which Judd was the lead author, the paper comments:

> The authors submit that the research reviewed in this article heralds a new paradigm in understanding the progression of clinical depression through various overlapping stages of severity, which begin at the seemingly 'subclinical' level of depressive symptoms. This conceptualization in turn dictates a public health approach, which emphasizes that treatment of MDD even at the deceptively mild levels of symptoms should be initiated or maintained (189).

This review would suggest that such claims are very premature and are difficult to support. Indeed, on the available evidence, the argument that subthreshold depression or anxiety poses significant disease burden is contentious. Further, there continues to be lack of clarity regarding the efficacy of treatment.

2.13 INTERMEDIATE DOSE ANTIDEPRESSANTS

A common theme found in general practice concerns the use of low dose antidepressants for relief of depressive symptoms. It is a topic that will be discussed later in this research and therefore the background data will be presented here. The first paper to critically examine this issue was published in 1971 and found that amitriptyline at 150mg per day has significant therapeutic effect, but at a dose of 75mg per day, there is no demonstrable improvement in depressive symptoms (216). Some 30 years later, Lawrenson et al found 17.6% of those treated with amitriptyline and 69% of those prescribed dothiepin were prescribed doses that were within

recommended guidelines stated by the British National Formulary (at least 75mg) (217). The percentage treated with therapeutic doses of SSRIs was effectively 100%. Those prescribed low doses of antidepressants for such conditions as chronic pain syndromes had been excluded. Of particular note was the very high drop out rate at 30 days for all medications of around 50%.

A Cochrane review of the use of low dose tricyclic antidepressants in treating depression was compiled in 2003 (218). A total of 35 studies on 2,013 participants compared low dose tricyclics with placebo and six studies compared low dose tricyclics with normal dose tricyclics. Low dose was described as 75mg to 100mg. Of these 35 studies, outcomes were sought for 1 week, 2 weeks, 4 weeks, between 6 and 8 weeks and later. The analysis revealed that at 4 weeks and 6-8 weeks, low dose tricyclic antidepressants were 1.65 (95% confidence interval 1.36 to 2.0) and 1.47 (1.12 to 1.94) times more likely than placebo to bring about response. Interestingly, the arm that compared low dose tricyclics with normal dose tricyclics found no difference in outcome of depression but more of those in the higher dose arm dropped out because of unacceptable side effects. The authors do note, however, that more rigorous studies are needed to understand risk benefit ratios of low dose tricyclic antidepressants. There would appear to be convincing evidence that the use of low dose tricyclic antidepressants for treating depressive disorder is justifiable.

2.14   CRITIQUE OF THE UTILITY OF DIAGNOSTIC SCHEMATA FOR GENERAL PRACTICE

2.14.1 Diagnostic systems and diagnosis recording systems
As previously discussed, diagnostic systems include the ICD and DSM families with their primary care versions. A feature of commonality with diagnostic systems is that they provide criteria against which a set of symptoms can be compared. Diagnosis recording systems, such as READ codes do not.

2.14.2 Utility of standard diagnostic schemata in general practice
An important article by Gask et al covering this issue was aptly titled "Capturing complexity: the case for a new classification system for mental disorders in primary care" (74). The thrust of this paper was that primary care represents such a different environment that standard diagnostic systems such as DSM and ICD have little

meaning. The undifferentiated, unfiltered and often unrecognised symptoms commonly found in primary care and the fluctuating nature of psychiatric symptoms are part of this distinction. Because those seen in primary care with mental health issues are less distressed, less impaired and less likely to have a mental health disorder, the classification systems of secondary care that are based on secondary care experience and research lack validity. A separate paper supporting this contention states it is likely that standard diagnostic systems have limited validity outside the US and Europe because of cultural differences, a statement supported by other research and opinions (219). A categorical approach based on symptom thresholds can cause difficulty when considering adjustment disorder, a common diagnosis in primary care. Subthreshold conditions are common in primary care, cause significant distress, but are unrecognised by DSM and ICD.

The work of Gask et al discussed above needs further comment. Although not explicitly stated, a major issue described in this research is the effectiveness of the test of diagnosis; how sensitive and specific are DSM and ICD systems at identifying mental disorder in the primary care context? Are there excessive false negatives (significant distress that does not meet DSM or ICD criteria for caseness)? A significant body of thought would say yes. As poignantly stated in an editorial for a prominent journal of psychiatry: "In sum, patients' misery and dysfunction are infrequently captured by DSM nosology" (220). Are there excessive false positives (medicalisation of normal life events)? As pointed out in an editorial of the British Journal of Psychiatry on adjustment disorders: "Thus, transient depressive responses to stressful events are increasingly regarded as illness requiring specific interventions" (221).

When discussing issues of sensitivity and specificity for diagnosing mental illness, further questions must be considered that assist in defining the issues. Do diagnostic schemata behave differently in primary care than specialty care? Are diagnostic schemata, when used in the primary care environment, capable of accurately identifying only those who are in need of treatment for psychological issues? These quite different questions have been confused in some of the literature, yet it is crucial to consider the concepts separately. If it is assumed that the role of a general practitioner is to identify and treat only those who meet 'caseness' as defined by diagnostic schemata, then the accuracy of DSM and ICD in the specific realm of general practice is the relevant question. However, if it is considered that the task of a

general practitioner is to identify those who are psychologically or psychiatrically distressed and who can be treated, the ability of diagnostic schema to assist in recognising this distress is more relevant.

Gask et al commented on the nature of evidence used to understand mental illness. They assert that secondary care experience and research has been utilised in the production of diagnostic systems and that these systems are frequently promoted for use in the primary care context. It is here that primary care must shoulder some of the responsibility for its absence at the bargaining table. A systematic review by Gilchrist and Gunn revealed a paucity of primary care observational studies concerning depression, the most common of mental illnesses found in general practice (171). The available studies were characterised as being limited by both sample size and duration of observation. It would seem that there is a partial vacuum of relevant primary care research in issues of mental illness and that specialist driven agendas have filled the void.

Katerndahl et al found significant distress in a population of those attending a primary care clinic but who did not have a mental illness as defined by DSM criteria (222). The research undertaken by this group confirmed the high rate of undiagnosable distress using DSM criteria in primary care (38% of their subject group of 60). This group with subsyndromal symptoms were identified by standard psychological tools (General Health Questionnaire (GHQ), the Hopkins Symptom Checklist-90, and the Short Form 36).

If diagnostic schemata are to have high utility for general practitioners, then they should identify only those who have disease. The research into sensitivity and specificity referred to above found that sensitivity increased with knowledge of the patient as well as degree of distress and impairment . Yet the research quoted above would hold that distress is poorly recognised in standard diagnostic systems.

A five year follow-up of general practice patients experiencing depression explored the rate at which DSM-IV criteria and general practitioners diagnosis coincided (223). Of 219 newly diagnosed cases of depression, only 12% met DSM-IV depression criterion. However, during the five years of the study, 94% were prescribed antidepressants at some stage. It would seem that DSM-IV criteria are insensitive in identifying those whom general practitioners believe are depressed and in need of treatment. Agreement between what information is recorded by general practitioners concerning depressed patients and what is found by using standard

depression assessment tool (PHQ-9) was the subject of a US study (224). The results indicated very poor correlation (kappa score of 0.1). However, functional impairment, suicidality and sleep disturbance were associated with increased detection rates.

Howe undertook a postal questionnaire of general practitioners in Sheffield, England concerning the perception of general practitioners on high rates of missed diagnoses (poor sensitivity) of mental illness by general practitioners and the reasons as to why this should be (225). The responses indicated doctor, patient and structural factors. General practitioners are not a homogeneous group when discussing the role of the general practitioner in managing mental illness. Some do not consider psychological problems in the realm of general practice, others were much more comfortable with diagnosing and managing mental illness. This may well reflect the wide cultural background and variable training of general practitioners. If the general practitioner felt that they were incapable of managing the care needed, they may not diagnose mental illness. Patient background factors of relevance were past history of mental illness, previous relationship with the general practitioner, and expectations of the consultation. The most important structural factor was shortage of time. A methodological problem with research where self reporting of opinion is the method of data collection is the difference between what respondents say they do and what they actually do in practice. It is unknown if the results of the research do reflect variables in sensitivity and specificity of diagnosing mental disorder by general practitioners or whether other variables have more bearing.

2.14.3 Using diagnostic schemata in primary care does not necessarily improve outcomes

Utility of schemata implies that there is a measure of usefulness. Logically, the systematic introduction of valid diagnostic tools into general practice should lead to better patient outcomes. The reality would seem to be significantly different as found in two studies.

1. In a study to monitor the recognition, diagnosis and management of mental disorders by 17 British general practitioners, a book of ICD-10 PHC diagnostic guides, management guides and training were supplied (226). The accuracy of general practitioner diagnoses was tested against a battery of six standard interview schedules. The results indicated no influence on the

recognition of mental disorders, no improvement in diagnostic accuracy and no improvement in pharmacological management of mental illness. There was, however, a significant increase in the number of patients recognised as having depression. The author's comments concerning the failure to show expected improvement in performance mainly focus on methodological issues such as measuring instruments that were too blunt or inadequate training of the general practitioners. They did, however, comment that the general practitioners tended to use the diagnostic system and guidelines intermittently and for occasional and specific problems rather than day to day use and this may explain the results.

2. A further study by Upton aimed at evaluating the effect of local adaptation and dissemination of the ICD-10 PHC arrived at similar disappointing results (50). This was a pair matched randomised controlled trial involving 43 general practices in Bristol, England. The intervention was local development and dissemination of ICD-10 PHC. Again, a battery of tests was used to identify mental illness so that the performance of the two general practice groups could be compared. They found no evidence that implementing the guidelines had any discernable effect on either sensitivity or specificity of diagnosis. Also, outcomes for patients at the control practices did not differ from the intervention practices. Similarly to the previously discussed paper, the authors considered several methodological problems as potential reasons for the outcomes including statistical anomalies and imprecise measurement tools. The authors also state that it is possible that using a categorical approach may have reduced the fidelity of measurement of practitioner and patient variation. Finally, there is acknowledgement that tools derived from research and experience in secondary care may be problematic when applied outside the population from where the data was collected.

2.14.4 Using externally generated guidelines and education for depression does not necessarily improve detection or outcomes

2.14.4.1 Research papers on negative outcomes
Two papers have reported failure of externally generated diagnostic systems to improve detection rates of mental illness.

1. The Hampshire Depression Project has been previously discussed. Further
    detail, though, is of relevance here. The project fell far short of desired
    outcomes (121, 226). It was a randomised controlled trial of 60 general
    practices in a single English health district designed to evaluate the effect of
    an education programme on detection rates and outcome of depression. The
    three assumptions behind such projects (and as discussed by the authors) are
    firstly that cases can be reliably identified, secondly that there are effective
    treatments available and thirdly that the general practitioners are educatable.
    The guideline developed for the general practitioners included advice on
    practice organisation, roles of non-medical professionals and treatment advice.
    The outcome of the study was that there was no improvement in sensitivity or
    specificity in recognition of depression and no improvement in patient
    outcomes. The authors particularly note the contrast between the high level of
    satisfaction expressed by the general practitioners regarding the educational
    initiative (80% of the general practitioners believed it would change their
    management of depression) and the failure of the education to influence
    practice.

    Again, a range of methodological issues are raised as potential reasons
    for the negative finding. Interestingly, there was no reported exit interview for
    the involved general practitioners as to why they thought there were no
    improvements in their performance or outcomes. The guideline recommended
    tricyclic antidepressants at a dose of 150mg a day as first line treatment but to
    change to better tolerated medication (presumably SSRI) if necessary. This
    represents a somewhat strange choice of medication given that the side effect
    profile of TCAs are substantially worse than SSRIs. Patient compliance may
    therefore have been a problem. The authors stated that the recommendation for
    TCAs to be used as first line therapy was based on the best available evidence
    (227). However, best available evidence is not necessarily what general
    practitioners feel is correct to do for individual patients.
    The basis of the guidelines was described in a separate paper (228). The
    guideline was developed by a steering committee, including the Professor of
    Psychiatry, Professor of Primary Medical Care, and Senior Lecturers in Public
    Health Medicine and Psychiatry, following a comprehensive review of
    available consensus statements and previously published guidelines. Of note is

the list of contributors; it is difficult to believe that this group brought understanding of the tacit knowledge concerning mental illness that is shared amongst general practitioners. A paper based guideline as used in the research will have considerable disadvantages in terms of immediacy of availability. The concept that a practice should be reorganised around mental health issues is also worthy of comment; mental health is only one of a wide range of services offered by general practice alongside other diseases characterised by high health care cost and debate over performance such as diabetes, asthma, hypertension etc. A commentary on the Hampshire depression project identified three major flaws with the concept that primary care should follow accepted clinical guidelines for treating major depression (229). First, making a diagnosis in primary care is much more complex than in secondary care, secondly, many general practitioners may very reasonably doubt the effectiveness of antidepressants in the face of social problems and third, there may be significant patient resistance to the use of antidepressants.

2. Further evidence that educational initiatives are of questionable value comes from a randomised controlled trial aimed at improving outcomes in depression and anxiety by teaching general practitioners brief cognitive skills (51). The intervention was four half-days of training in giving brief cognitive therapy. The results indicated no difference in patient outcomes and no difference in general practitioner's attitudes or knowledge of depression. As pointed out by Henke et al, the conditions under which general practitioners work has significant impact on their performance (230). High numbers of barriers to care is associated with higher rate of pharmacological treatments, less patient education on depression and fewer follow-up visits. The barriers to effective treatment may be more environmental than educational in some instances.

2.14.4.2 Successful educational interventions

Some reported educational initiatives were successful. A good outcome was achieved in an Australian controlled trial by Naismith et al with interventions of both an educational trial and practice audit (231). The results suggested a significant improvement in diagnosis rates by general practitioners for common mental disorders as well as instituting more mental health treatments than the control group. Interestingly, audit did not improve rates of diagnosis. A small controlled trial used

video feedback with an educational intervention as a method of improving the ability to detect distress as measured against the GHQ (232). The results showed a modest but significant improvement in the ability to detect distress. Several issues emerge from this research. The small group of participants (19 general practitioners) were self selected and very likely to have enthusiasm for such interventions. The measurement of outcome was detecting stress as measured against the GHQ. There was no measurement of patient outcomes. It is therefore difficult to gauge the usefulness of increased detection of distress.

2.14.4.3 Lessons for intervention
One important conclusion to be drawn from the above research is that educational programmes should be carefully considered before implementation. The identification of barriers to diagnosing mental illness, particularly self identification of barriers, may not be an accurate predictor of performance. There is no shortage of research on barriers to effective management of common mental health conditions in general practice and almost all call for increased educational initiatives (119). The research described above would advise caution regarding the instigation of educational initiatives as a response to perceived poor sensitivity and specificity of diagnosis of mental illness by general practitioners.

2.14.5 Detection of mild mental illness may have limited clinical value
A US study used the Hamilton Depression Rating Scale to compare 34 undetected and 25 detected depressed patients in primary care (233). At follow-up (four and a half months later) the detected patients had significantly worse symptoms. The authors commented that differences between the two groups in the stage of depression may account for the results.

Schulberg et al followed a cohort of depressed patients for 6 month (148). Subjects were ambulatory patients at the equivalent of general practices. Of approximately 1,500 screened using a depression rating instrument, 294 were recruited and 274 completed the trial. The researchers documented the doctor's assessment, treatment ordered and depression score at 6 months. The results indicated that patients are at similar risk for a persisting depressive disorder regardless of whether or not the physician diagnosed and treated for depression. Of those whom the physician failed to diagnose depression (and therefore did not treat), 70% had

remitted at 6 months. The authors state that a methodological weakness was choosing a cohort design rather than a case controlled trial. However, it would be generally accepted that a cohort design would provide better evidence than a case controlled trial. The recruitment process also resulted in a disproportionate number of young women in the trial. Another criticism is that the numbers recruited are somewhat small after division into groups.

Dowrick and Buchan undertook a prospective study in England on 179 patients who had scored at least 14 on the Beck depression inventory (234). The purpose of the study was to measure the effects of disclosure to a general practitioner that a patient was depressed where the general practitioner had not made the diagnosis of depression, leaving 116 in the study. The researchers then disclosed the positive depression scores for 45% of the patients to the general practitioners. Follow-up at 6 and 12 months demonstrated no significant differences between the patients with disclosed and non-disclosed depression. An initial interview with the doctors concerned had indicated that all were aware of current best practice in treating depression, all reported using antidepressants at recommended doses. However, a clinical note review of their practice revealed substantial discrepancy between what they knew (competence) and what they did (performance). What is not provided was the class of medication used by the general practitioners. Tricyclic antidepressants have a contentious history in general practice for treating depression yet we do not know if they were used by some of the general practitioners. It is likely, based on information from other studies undertaken around the same time, that just over 50% of patients were started on tricyclic medications as a first line therapy (235). The authors point out that a 3 point history (baseline, 6 months and 12 months) may not accurately reflect a disease characterised by fluctuations in clinical course. The act of screening may also have brought attention to psychiatric symptoms for patients. Nevertheless, this study does add weight to the notion that recognition of depression by general practitioners may have little value to patient outcomes.

The cohort study by Jackson et al discussed above also produced data relevant to understanding the progression of those with mental illness (96). The term 'minor depression' and 'subthreshold depression' are used interchangeably in the study. Similarly, anxiety 'not otherwise stated' accounted for 6% of anxiety but is a subthreshold disorder. The relevant findings were that 56% of those with major depression were diagnosed at some stage in the five year follow-up period compared

to a lesser 32% with subthreshold depression. Of those with major depression at entry to the study, only 20% had a diagnosable mental health problem at five years. Those recognised with major depression initially had a marked increase (relative risk 5.9) in the chance of being depressed five years later in comparison to the undetected group. Functional status positively correlated with recognition rates. This study was compromised by the high drop out rate (387 out of 500 were available for follow-up at five years), self reporting of treatment, low numbers in some diagnostic categories and homogeneity of patients (all enrolled from a single medical clinic in the US). The conclusion from these studies is that recognition of mental illness is a prerequisite for effective management in primary care, but recognition alone is insufficient.

2.14.6 Recognition of the unique characteristics of mental illness in primary care

A growing body of both research and opinion articles have emerged that support the notion that mental health in primary care is not simply a subset of specialty psychiatry. A plethora of explanations abound for this stance but they can be condensed and categorised. The most relevant papers are presented in Table 12.

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Table 12. Factors influencing the diagnostic process				
PAPER	PATIENT FACTORS	DOCTOR FACTORS	SERVICE FACTORS	LACK OF APPROPRIATE DIAGNOSTIC SYSTEM
Hickie [116]	√	√	√	√
Tyrer[236]				√
Jacob[237]	√			√
Casey [221]				√
Chew-Graham [129]			√	√
Collings [58]		√		
Dew [59]				√
Howe [225]	√	√	√	√
Katerndahl [54]	√		√	√

It should be remembered that many of the discussions in the papers were not written for the purpose of comparison in this way. However, it is clear that lack of appropriate diagnostic system is a shared concern of many researchers in the field. A poignant remark in an early research paper concerning the 'hidden burden' of psychiatric disorders in general practice was made by Goldberg and Blackwell (106). The researchers had a unique opportunity to place a psychiatrist into the general practice setting because the psychiatrist wanted to retrain in general practice.

Among the 200 patients seen by the psychiatrist there were 93 psychiatric cases, of which 31 were unknown to the general practitioner before he saw the results of the questionnaire. This shows that even though the general practitioner was himself a psychiatrist and on his mettle to detect disturbance because of the survey, he failed to detect one-third of the disturbed patients recognized by the psychiatrist.

The environment of general practice would seem to strongly influence diagnostic behaviour and would seem to negate specialist training. This is in accord with previously discussed research that was part of the Hampshire Depression Project where provision of detailed psychiatric knowledge made no significant difference to diagnostic accuracy or patient outcomes.

2.15   MAKING A DIAGNOSIS OF MENTAL ILLNESS

The process of diagnosis in specialty psychiatry is aided by several factors. It can be assumed that a patient seeing a psychiatrist does have mental illness and indeed, if the criteria for mental illness are not met, the role of the psychiatrist ends. For any particular diagnosis, symptoms are matched to diagnostic criteria. Subsyndromal cases do add complexity to this process as does the presence of distress without diagnosable psychiatric disease that may be part of the work of psychiatrists who are in private practice. The mechanical processes just described are, of course, an oversimplification. Expert thinking in psychiatry, where experienced practitioners are able to make increasingly accurate diagnoses on increasingly reduced data, are undoubtedly as common as in other branches of medicine.

The perception that general practitioners should use categorical systems such as DSM or ICD or even the primary care versions of such systems implies that general practitioners should diagnose mental illness categorically. The table above would suggest that general practitioners do not use these categorical systems. The literature reviewed would also conclude that general practitioners diagnostic methods are missing a significant proportion of mental health issues, depression in particular. This raises the issue of what information is available concerning how general practitioners diagnose mental illness.

2.15.1 Distress as a key factor in general practice

A framework for understanding the mechanisms by which general practitioners approach the diagnosis of mental illness was provided by Goldberg (238). He describes three categories of presentation. First is those with major illness where there is little doubt that intervention in the way of medication and/or intensive psychotherapy is warranted and there is little dispute that psychiatric disease is present. These would encompass entities such as severe depression, mania and psychosis. The second group is those who have psychological distress not requiring specific intervention. The third group is those who have psychological distress who do require intervention. An important part of distinguishing the two groups who are distressed but who do and do not need intervention is the concept of coping. Distress with coping in general does not need intervention. Distress with inability to cope may well need intervention. Degree of distress and help seeking behaviour also assist in distinguishing those where intervention is needed from those where no intervention is warranted.

Those with distress that do not need further intervention is worthy of further discussion. Goldberg describes these afflictions as variously 'subclinical' where symptoms are minor; transient and self limiting symptoms; those where the patient refuses engagement and those where the initiating event cannot be modified. Clearly, Goldberg's paper, published in 1982, was well before the emergence of attempts to categorise and recommend treatment for subthreshold disorders as discussed above and the words used by Goldberg need to be contexturalised historically. The third category (those with distress that does require intervention), labelling the disorder is part of the therapeutic manoeuvre as may be intervention with psychotropic medications or psychological therapy. In critiquing his own position, Goldberg admits the differences between criteria based systems such as diagnostic schemata and his proposed heuristic system are major, but points out that, for example, distinguishing primary from secondary psychological disturbance fits uncomfortably into categorical systems.

2.15.2 Other features of import to general practitioners

The research detailed above gives some understanding the diagnostic process. It should be remembered that the research papers referenced may not have been designed to be analysed in this way. However, such an analysis does provide interesting insights.

2.15.2.1 Factors that facilitate recognition of mental illness

Several factors seem to be associated with increasing the likelihood of making a diagnosis of mental illness in general practice:

1. Level of distress (56, 58, 120, 121, 123)

2. Severity of symptoms (124, 125, 126, 127)

3. Level of disability (126)

4. Sleep disturbance (224)

5. Prior knowledge of the patient (130)

6. Past history of mental illness (130)

7. Suicidality (224)

8. Ability of the doctor to influence outcome (56)

9. Outgoing personality high academic achievement in the doctor (136)

It is not suggested that these represent a complete list of methods by which a diagnosis of mental illness is made. However, the list is an interesting reflection on what supporting factors general practitioners consider to be important when diagnosing mental illness. Certainly these factors do not represent a different method of conceptualising mental illness in primary health care. The level of disability, for example, directly correlates with Axis V of the DSM. Of interest is the fact that 'level of distress', 'severity of symptoms' in particular are not categorical in nature, they are dimensional.

2.15.2.2 Factors that adversely affect the recognition rate of mental illness

The research concerning the approach taken by general practitioners when diagnosing mental illness can be summarised as:

1. Patient resistance (128, 129)

2. Over medicalisation of normal life events (128, 129, 137)

3. Pressure of time (160, 161)

4. Medico-legal issues (171)

5. Other imperatives (physical illness) in the consultation (95, 350, 163)

6. Variable interest in mental health issues (135)

7. Inability to affect outcome (171, 172)

8. Over confidence in ability to detect and manage mental illness (131)

These are contextual issues that explain, to a degree, the low recognition rate of mental illness in general practice. What remains unknown is why, from a general practitioner's perspective, are diagnostic systems that are purported to improve both accuracy of diagnosis and recognition rate of mental illness not used. This is particularly important to understand given that primary care versions of the major diagnostic systems are available and that there is open criticism of the poor uptake of such systems.

2.15.3 Clinical reasoning

A useful definition of clinical reasoning, as used by Round, is "The cognitive process that is necessary to evaluate and manage a patient's medical problem"(239). The process of general practitioners diagnosing mental illness fits comfortably with this definition. The concept of the 'diagnostic expert' is also relevant.

2.15.3.1 Expert diagnosticians

Experts in diagnosis, whether they be surgeons, physicians, general practitioners or from other disciplines have been the subject of considerable study. A study by Round designed to identify and describe the clinical reasoning characteristics of expert general practitioners found that these expert diagnosticians were efficient, effective and accurate while using less clinical information than non-experts(240). This finding is in accord with other published research on expert thinking and indeed can be considered a defining characteristic(241,242).

Bordage described the stages that are traversed in the development from novice to expert diagnostician(243). The stages are defined not only by knowledge and experience acquired, but by how knowledge and experience are 'chunked' as mental representations. Although four stages of development are described, it is only the expert stage, the 'compiled' thinker, which is of interest to this research. Knowledge is necessary in the process of diagnosis but it is how knowledge is integrated that is critical. Norman, in a review of literature on clinical reasoning

concluded that an extensive and multidimensional knowledge base was a pivotal component of expert thinking (244). Both general practitioners and psychiatrists can be considered expert thinkers but each field exposes its practitioners to contrasting experiences, professional culture and education.

2.15.3.2 Discordance between expert thinking and error of diagnosis
It has been assumed in the research concerning diagnosis of mental illness by general practitioners that they were neither novices nor trainees. What is apparent in the literature on accuracy of diagnosing mental illness is that the majority of mental illness is undiagnosed by experienced general practitioners. The literature implies, but does not overtly claim, that this represents error of diagnosis. Although this may be a reasonable statement when considering an individual general practitioner, the generalisability to the profession as a whole creates some tensions. Quoting Groves from a paper on the characteristics of clinical reasoning of experts, "Error in clinical reasoning, and, hence, diagnosis originate from inadequate knowledge, inaccurate data collection or incorrect integration and interpretation of data"(232). By implication, general practitioners, as a community of practice, have either inadequate data collection methods, inadequate clinical knowledge, or do not integrate and interpret data well. The alternate view is that the validity of the definition of error in clinical judgement is highly context specific. The validity of what knowledge is relevant, what data is important to collect and how such information should be integrated is dependent on who is measuring the validity. The context of general practice directly influences the validity of diagnosis and management.

2.16   SUMMARY

2.16.1 Low detection rates of mental illness by general practitioners
The available research clearly identifies low detection rates of mental illness in general practice and suggests high rates of treatment for those who do not meet caseness for mental illness. However, the available literature provides very limited insight into why this should be so. There is little direct evidence that quantifies the use of diagnostic schemata in general practice. There is some circumstantial evidence to suggest they are infrequently used. Those presenting to general practitioners commonly have mental illness. A significant burden of mental illness is undiagnosed by general practitioners and this has given rise to concerns by wide ranging

stakeholders in mental health. Solutions to the problem commonly arise from without general practice and focus on the continuum of disease-diagnosis-treatment-recovery in primary care. Use of diagnostic schemata is frequently advised as part of this continuum as robust method of diagnosis even though the diagnostic systems were a product of observation and research on mental illness in secondary care. Little information has been sought from general practitioners as to why diagnostic schemata are infrequently used in primary care.

2.16.2 Patient involvement in recognition and management of mental disorder

There is growing recognition of the differences in context between secondary and primary care and how such contextual differences may account for the high rate of undiagnosed mental illness in general practice. Part of this contextual milieu is the role of patients in decision making. Rather than being benign and inert subjects of medical diagnostic and therapeutic systems, patients are active participants in the diagnostic and therapeutic processes and whose belief systems influence the diagnostic process beyond and above the presentation of symptoms. It may well be that a diagnosis will not be made if there is significant patient resistance to a diagnosis of mental illness.

2.16.3 Subthreshold disorders

A group of disorders that are termed subsyndromal, subthreshold or minor depression are of particular relevance to both general practice and this research because they are common and seen predominantly in general practice. They are variably defined, refer predominantly to depressive symptomalogy as well as anxiety. They are associated with inconclusive evidence regarding effectiveness of treatment and level of disability. They represent part of a 'grey area' where general practitioners may discern distress without the distress meeting 'caseness' of diagnostic schemata. This distress may be treated as mental disorder by a general practitioner.

2.16.4 The environment of general practice

The environment of general practice also causes systemic issues that impact on diagnosis and treatment. It would seem that general practitioners are aware that many potential diagnoses of mental illness are missed. However, financial constraints, lack of availability of secondary care services, coexistence of other morbidities and

significant social difficulties all have bearing on both diagnosis and treatment. If there is no management advantage in making a formal diagnosis of mental illness due to unavailability of services, it is less likely that a general practitioner will make such a diagnosis.

2.16.5 The tools of diagnosis

Diagnostic systems would appear to have significant limitations when transposed into general practice. When used by general practitioners, the rate of detection of 'caseness' does not seem to improve and outcomes are unchanged. This questions the overall utility of diagnostic schemata in general practice. Other 'imported' systems from without general practice incorporating education, diagnosis and treatment have had variable but overall disappointing effects on detection rates, treatment and outcomes of mental illness. General practitioners, even when told that a patient has a mental disorder, seem to make little change to patient management and therefore no significant change is seen to patient outcome. Complementing this, those recognised by general practitioners with depression and those unrecognised have almost identical outcomes. The transferability of secondary care developed diagnostic systems to general practice is poor.

2.16.6 The work of general practice

The issue of whether general practitioners see their work as detecting 'caseness' as defined by diagnostic systems or treating those with either psychological or psychiatric distress is partly answered by the literature reviewed. It would seem that general practitioners treat distress of whatever cause and pay scant attention to 'caseness' of diagnostic systems. It is unclear if this is by design or default, but the end result is poor recognition of mental illness as defined by such diagnostic systems and therefore as defined by other mental health stakeholders. The benefits of using diagnostic systems include knowledge of therapeutic options based on previous research on those with similar disorders, information on prognosis, allocation of resources in a cost effective manner and reassurance for those afflicted with mental disorder that there is a body of evidence that can inform their care.

There is little research focusing on what general practitioners views on the diagnostic systems are, their knowledge of these systems, their reasons for not using

them, what factors are considered important by general practitioners when making a diagnosis of mental illness and how a diagnostic system could achieve better utility in the work of general practice. Without such research, the current uncomfortable position will continue.

2.16.7 The research questions

The thesis put forward in this work is that diagnostic schemata, such as DSM-IV and ICD-10, are inappropriate tools for diagnosing and managing mental illness in general practice. Therefore, the specific questions that will inform this thesis are:

1. What is the uptake of diagnostic schemata by general practitioners?

2. For those who do not use diagnostic schemata, why not?

3. What do general practitioners consider when making a diagnosis of mental illness?

4. If a diagnostic system were to be of greater use, what features would it have?

CHAPTER 3 – METHODOLOGY

3.1 INTRODUCTION

This chapter will discuss the methodologies used in the research.

The following will be established:

- Refinement of the research questions.

- The requirement for both qualitative and quantitative stages of research based on the research questions and aim of the research.

- The need to anchor both qualitative and quantitative research into sound theoretical constructs.

- A description of epistemological foundations of both qualitative and quantitative research.

- Robust theoretical stances for both qualitative and quantitative stages.

- Rationale for choosing focus groups as the preferred method of qualitative methodology.

- Rationale for undertaking a survey based on the qualitative results.

- Potential advantages and disadvantages of using mixed methodology research.

- Operational process for data collection and analysis for both arms of this research.

A rationale for why the methodologies were chosen will be presented. Relevant background to the methodologies will be discussed to provide a sound theoretical base. There are advantages and difficulties of using two separate and fundamentally different methodologies and these will be considered. Finally, the methods used will be described.

3.2 RATIONALE FOR METHODOLOGIES CHOSEN

3.2.1 Refining the research questions

Four principal research questions have been identified in section 2.16.7. Ethical approval included a process of consultation with Maori. A Maori research group attached to Waikato Hospital provided a suitable contact. The Health Equity Assessment Tool (HEAT) as devised by the Ministry of Health was explored with the

assistance of this contact. The HEAT is designed to assist researchers to consider how health inequalities occur and what effective interventions may be relevant. The tool consists of 10 questions that are concerned with the impact of health inequalities in the specific area of research being undertaken (245).

- What inequalities exist in relation to the health issue under consideration?
- Who is most advantaged and how?
- How did the inequalities occur? What are the mechanisms by which the inequalities were created, maintained or increased?
- Where/how will you intervene to tackle this issue?
- How will you improve Maori health outcomes and reduce health inequalities experienced by Maori?
- How could this intervention affect health inequalities?
- Who will benefit most?
- What might the unintended consequences be?
- What will you do to make sure the intervention does reduce inequalities?
- How will you know if inequalities have been reduced?

The design of the tool was in response to the document "Reducing inequalities in Health" produced by the Ministry of Health that outlines both principles and a framework for reducing inequalities (246). This document specifically refers to the need for development of health impact assessment tools (p20). For this research, the result of the consultation process was to, add a specific question concerning the influence of cultural issues on diagnosing mental illness.

A research reference group had been set up to provide a point of contact for three research projects on mental health, including this project. The membership of this group comprised of representatives from secondary mental health care, both medical and non-medical as well as consumer representation and management expertise. The result of these consultations was a set of questions that were used to structure the focus groups:

1. Do general practitioners use diagnostic schemata such as the ICD 10 and DSM 4?

2. How useful in general practice are current diagnostic schemata in mental illness such as the ICD 10 and DSM 4?

3. When general practitioners make a formal diagnosis of mental illness, what factors are considered?

4. How is the concept of 'mental illness' different in general practice than other disciplines such as psychiatry and mental health nurses?

5. How do cultural issues influence the diagnosis of mental illness?

6. What would be a more useful system of classification than the existing ones?

3.2.2   The requirement for two methodologies

If the research was to be truly representative of the opinions of general practitioners in New Zealand, representative sampling would be required. The principal research questions outlined above are general in nature and therefore would not be amenable to tools such as surveys. The literature review found little in the way of prior research that could assist in formulating more direct questions. To optimise the return rate for a survey, attention to both clarity of questions and brevity is required. The research questions posed above, if sent by post to general practitioners would involve a considerable amount of their time with consequences to the return rate.

A solution to the difficulties of broad conceptual questions and a desire to understand the perceptions of the community of general practitioners on these questions was to use both qualitative and quantitative methodologies. Qualitative research is capable of creating understanding of how general practitioners diagnose mental illness, what their impressions of diagnostic schemata are and distilling this information into a coherent picture. Quantitative methodology is capable of providing information on questions such as which factors are considered most important in diagnosis of mental illness, how many general practitioners use diagnostic schemata and which concerns with diagnostic systems are of greatest import.

3.3 THEORETICAL BACKGROUND TO THIS RESEARCH

In any substantial body of research, the theoretical constructs that anchor the research should be stated. As Jaye points out in a critique of qualitative theorising in general practice:

> While in-depth methodological and theoretical aspects of research
> are important tasks for masterate and doctorate research in social
> sciences and nursing, it does not appear to be such an integral task
> for equivalent research in general practice (247).

In order to discuss the use of contrasting methodologies and the difficulties that such an approach may cause, the terms of ontology, epistemology and theoretical perspective need to be defined in relation to each of the methodologies. Crotty not only emphasised the importance of understanding the theoretical constructs to a research project, but gave a framework by which researchers could understand and undertake the process of anchoring research into sound theoretical constructs (248). He advised that attention to the sequence of

Ontology →epistemology → theoretical perspective → methodology → methods

be acknowledged and discussed(p4). This framework will be used to describe the theoretical foundations of this research.

3.3.1 Ontology

Webster's Third New International Dictionary (249) defines ontology:

"1. A science or study of being: specifically, a branch of metaphysics relating to the nature and relations of being; a particular system according to which problems of the nature of being are investigated; first philosophy.

2. A theory concerning the kinds of entities and specifically the kinds of abstract entities that are to be admitted to a language system".

A standard working definition of ontology would be:

An ontology consists of all those items which are, in an appropriate sense, accepted. (250)

If knowledge is the object of concern, an ontological question would be: what is this object? Ontological questions are concerned with the nature of existence and reality. The relevance of ontological issues for this research is the very different ontological approaches inherent in objectivism and constructivism. This will be explored further below.

3.3.2   Epistemology

The Stanford Encyclopedia of Philosophy defines epistemology as "the study of knowledge and justified belief". It is also clearly important to distinguish between the separate elements of epistemology and ontology as confusion abounds in the literature. Again, quoting from Poli:

Epistemological concepts are: belief, knowledge, uncertain knowledge, revision of knowledge, wrong knowledge ... epistemology is the theory of the different kinds of knowledge and the ways in which it is used. (251).

As succinctly stated by Johnstone, "The epistemological perspective is concerned with the relationship of the researcher to what he or she is researching" (252). Thus epistemology can be considered the relationship between the researcher and the data being collected.

3.3.3   The relationship between ontology and epistemology

Information systems research, because of its multinational and widely interdisciplinary context, has sought shared concepts on the theoretical constructs underpinning new developments. Becker and Niehaves describe a framework for analysing epistemological perspectives in information systems that allows clarity concerning definitions of ontology and epistemology while side stepping controversy over semantics (253).

Table 23. Ontological and epistemological connections		
What is the object of cognition? (Ontology)	Ontological realism: a world exists independently of human cognition, for instance, independent of thought and speech processes.	Ontological idealism: the 'world' is a construct depending on human consciousness.
What is the relationship between cognition and the object of cognition? (Epistemology)	Epistemological realism: objective cognition of an independent reality is possible.	Epistemological constructivism: the relationship of cognition and the object of cognition is determined by the subject.

These definitions will be used in describing the approaches taken in this thesis.

3.3.3.1 Objectivism/ontological realism

Objectivism embraces the concept that an objective reality exists. This objective reality can be increasingly known through the accumulation of more complete information. A quote, often used and attributed to Ayn Rand, encapsulates this concept and frames it in relationship to knowledge: "Reality, the external world, exists independent of man's consciousness, independent of any observer's knowledge, beliefs, feelings, desires or fears. This means that A is A, that facts are facts, that things are what they are − and that the task of man's consciousness is to *perceive* reality, *not* to create or invent it".

3.3.3.2 Constructivism/ontological idealism

As with many metaphysical concepts, a variety of interpretations have arisen on the basic theme of constructivism. Indeed, constructivism has been termed both an ontology and an epistemology (254). Conversely, arguments have been put forth that question the existence of any ontology that gives rise to a constructivist epistemology (255). Further, a wide range of interpretations of constructivism have been proposed such as radical, social, cultural, physical, evolutionary, post-modern and cybernetic

Wilson discusses an example of constructivist thinking in general practice of the 'difficult patient' (256). In a constructivist model "... heart-sink patients would no longer be alienated by a narrow biomedical science, or be disadvantaged by the dominant biological materialism of the 20th century". Instead, a broader medical paradigm that included the personal, social and spiritual dimensions of the person would be legitimately included.

Constructivist theory would hold that knowledge is not a fixed object, it is constructed by an individual through experience of that object. Individuals are active agents (rather than the passive agents implied by objectivist ontology) who engage in their own construction of knowledge by integrating new information into their own existing structures of knowledge, and by associating and representing it in a meaningful way. Since each of us experiences from our own point of view, each of us experiences a different reality. Social constructivism, the most widely used of constructivist approaches, emphasises the importance of both context and culture in understanding what occurs in society. Therefore, social groups and the collective activities they engage in should be the focus of analysis (238).

3.3.3.3 Epistemological realism and epistemological constructivism
As previously discussed, epistemology defines the relationship between the researcher and the research. The assumption of constructivism (ontological idealism) and therefore of social constructivism, is that the research is value laden and the researcher brings a set of assumptions to the research that will influence what data will be gathered and how it will be interpreted. The research and researcher are interwoven   The assumption of objectivist (ontological realist) perspective is that research is value free and the researcher is independent of the research. The results of research should be identical regardless of who undertakes the research (assuming that the research process is robust).

3.4   THEORETICAL PERSPECTIVE
As stated by Crotty, "… the theoretical perspective is the philosophical stance informing the methodology and thus providing a context for the process, and thus grounding its logic and criteria" (238 p3). The commonly used term of 'quantitative research' implies, but does not necessarily represent positivism as a theoretical perspective.

3.4.1   Positivism as a theoretical perspective

A positivistic theoretical perspective would hold that the scientific method is suitable for all forms of research irrespective of the research topic or subjects. Devers summarises this stance in more detail (257).

> 1. The methods and procedures of the natural sciences are appropriate to the social sciences. This view stems from positivist ontology, that a stable, objective reality exists independent of an individual's perception.
>
> 2. Only those phenomena that are observable, in the sense of being amenable to the senses, can validly be warranted as knowledge. Phenomena that cannot be observed either directly or indirectly with the aid of instruments have no place.
>
> 3. Scientific knowledge is arrived at through the accumulation of verified facts that feed into our theoretical body of knowledge. Such findings are often referred to as 'laws' that is, empirically established patterns and regularities.
>
> 4. Hypotheses are derived from scientific theories and are submitted to empirical testing. This implies that science is deductive.
>
> 5. A particular stance toward values occurs in two senses. The first is that scientists or researchers should be purged of their own values because such values may impair objectivity and undermine the validity of the knowledge produced. The second is that a sharp distinction should be drawn between scientific issues and statements, on the one hand, and normative ones, on the other.

Such a stance is the accepted heuristic in the scientific community and, to a large extent, in the medical community. Research methods such as surveys accord well with this stance. Lit and Shek describe the broad principles of social constructivism as applied to mental health counselling and compare these principles with positivistic principles (258). Their findings are summarised in Table 14.

Table 14. Comparison of positivism and social constructionism in mental health counselling

	Positivism	Social constructionism
Assessment and interpretation of the problem	Client and/or society has the problem, the problem is malfunction and pathology	Problems are unique to the narrative context, problems exist in languages
Way of knowing in clinical practice	Individual knower who possesses capacity to know	Communicative action, meaning generating discourse
Intervention strategies and goals	Application of theory into practice, elimination of problem	Critical application of theories, two-way exchange of ideas, open new meanings, linguistic event
Role of therapists	Expert, actor and organiser, occupying a superior position	Co-constructor, conversational artist, participant observer, participant facilitator
Role of clients	Elements in a system, patients, passive service recipient, object being analysed, occupying an inferior position	Active meaning maker, reflexive, having an equal status with therapists.
Role of value	Value free	Value laden

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3.4.2   Interpretivism as a theoretical perspective

An opposing theoretical perspective is interpretivism. Quoting Michael Crotty, interpretivism *"looks for culturally derived and historically situated interpretations of the social life-world"* (238 p 67). Interpretivism rejects the notion of scientific thought as the only way to understand social phenomena. Rather, it holds that reality is socially constructed and is a process of constant interpretation and reinterpretation of people's behaviour. Interpretivist research is thus subjective in nature and value laden.

3.4.3   Critical realism (complex realism) as a theoretical perspective

An alternative to the somewhat polarised stances of either positivistic or interpretivist theoretical perspectives is critical realism. The origin of critical realism was the disillusionment with positivistic notions of universal laws that could explain all phenomena and the belief that only the observable could be researched. However, the only alternate stance was interpretivist where knowledge was subject to differing interpretations regarding its 'truth', discourse becomes the subject of study and a sense of nihilism over what is knowable was the outcome. As explained by Clark, Lissel and Davis:

> Complex realism emerged as a wider attempt to harness the strengths and address the weaknesses of positivism, idealism, and relativism. It acknowledges the possibility of science but recognizes the social dimensions of humans and science in a manner that does not fall into problematic versions of relativism or positivism. (259)

In critical realism, the domains of the social and natural world can be considered to be divided between the real, the actual and the empirical (260). The real is the realm of objects regardless of our awareness of their existence. The actual is what happens when people interact with objects and the empirical is our experience of interacting with objects. Since neither positivistic nor relativistic (interpretive) concepts are rejected, the research methodology and methods are eclectic and commonly use both quantative and qualitative methods together, either sequentially or in parallel (261).

Pilgrim and Bentall give an excellent account of how the concept of depression is severely limited by using either positivistic or relativistic concepts alone (262). They conclude that critical realism provides a sound theoretical framework for mental health problems due to the ability to incorporate historical and cultural relativism while avoiding the tendency of purely constructionist stances to focus on discourse to the exclusion of more useful and transferable research.

3.4.4   Interpretive (qualitative) methodologies

Dew presents a short but insightful overview of qualitative methodologies (263). The advantages and rationale for choosing a particular methodology are given. For example, grounded theory is described as a method of theory building rather than

theory testing and is useful in this way. He lists the major qualitative methodologies as:

Table 15. Qualitative methodologies	
Methodology	**Use**
Phenomenology	Gaining insight into a lived experience
Grounded theory	Translation of data into a new theory or model
Discourse analysis	Use of language to represent a concept
Ethnography	Understanding of cultural beliefs and practices
Ethnomethodology	Understanding the organization of social groups
Action research	Understand and incrementally change social structures and beliefs

The assumption behind all of these qualitative methodologies is epistemological constructivism and ontological idealism. The purpose of this research (understanding how diagnostic systems for mental illness fit into the world of general practice and understanding how general practitioners make diagnoses in mental health) does not comfortably fit into any single methodology. Conversely, several of these methodologies are relevant to the research. A new understanding of how general practitioners negotiate their way through an inherently complex entity such as mental illness in a consultation would have some fit with grounded theory.

Ethnomethodology is commonly used to understand how social work groups function and their relationship with wider groups. This would have reasonable fit with the aim of the research; general practitioners existing inside a wider health environment and the tensions between the culture of secondary care psychiatry and primary care.

3.4.5 Positivistic (quantitative) methodologies

Quantitative methodologies are concerned with measurement, comparison and association and are grounded in ontological and epistemological realism. Hennekens and Buring provide a list of the standard quantitative methodologies (264):

Table 16. Quantitative methodologies	
Methodology	**Use**
Descriptive studies	Collecting information from a sample of a described group to make general statements about the group
Cohort studies	Observing changes that occur to a specified group over time
Case control studies	Compare characteristics of those with a condition and those without
Intervention studies	Assessing the effect of a specified intervention on a specified group

Descriptive studies imply that the unit of interest is a population, not an individual. Also implied is the absence of an intervention. Examples are prevalence studies, longitudinal studies and cross-sectional studies. This research uses cross-sectional, descriptive methodology.

3.4.6 Using mixed methodology

There are inherent difficulties in using both qualitative and quantitative methodologies in a research project due to the fundamentally different assumptions that each methodology makes about the nature of data. This tension has created considerable debate with firm positions taken on both sides (265).

Johnstone and Onwuegbuzie provide a rich account of undertaking and reporting a mixed methodology research project (242). They describe the need to attend to the differences in assumptions about the data collected and the difficulty of presentation of results; should qualitative data be presented as a subset of quantitative data or vice versa? They advocate an alternative where inductive and deductive reasoning are intertwined and neither has dominance.

Denscombe describes pragmatism as being a philosophical partner for mixed methods research (266). Pragmatic influences, according to Denscombe can provide; a common ground of compatibility between methods; an alternative 'third' method when neither qualitative nor quantitative methods will provide adequate answers; a new orthodoxy representing best practice and finally expediency. It is the limitations of a single methodology to answer the research questions and the greater scope of understanding provided by using both that justifies mixed methods research for this project.

The reasons for using mixed methodology are commonly listed as triangulation, complementarity and expansion (267). In this research, the purpose of using mixed methods is expansion; the desire to test the generalisability of the qualitative findings beyond the relatively small number of respondents in the qualitative phase. Various methods of combining qualitative with quantitative methodologies exist. The methods can be used in series or parallel. If used in series, either can occur first depending on the research question. The 'qualitative →quantative' combination is probably the best known. As commented by Kelle:

> The design acknowledged even by the fiercest paradigm warriors of
> the quantitative tradition (but nevertheless used only occasionally by
> them) is a sequential qualitative-quantitative design (qual→/quan),
> whereby a qualitative study helps to identify core issues and to
> develop theoretical concepts and hypotheses, which can be further
> examined in a subsequent quantitative study that is carried out with
> the goal to find out whether concepts relevant in a comparable small
> number of cases describe and explain social phenomena in a greater
> domain accordingly.(267)

A qualitative → quantitative design was used in this research and for the same reasons as described by Kelle. The author of this research had previously been involved in research with a similar methodological approach (qualitative study informing a quantitative study) and this led to a degree of awareness of some of the issues that could emerge from a logistical perspective (268,269).

3.4.7 The researcher's perspective

An immediate difficulty that occurs when presenting research results that have used both qualitative and quantitative research methods is the comparative stance of the researcher. Positivistic research, a position from which the majority of medical research arises, assumes that the researcher is unbiased and value free. It is therefore highly unusual in positivistic research to find a description of the position of the researcher. Interpretive research, on the other hand, assumes that bias exists in design and implementation of research due to beliefs of those undertaking the research. There is also an assumption that the results of any research are value laden.

3.4.7.1 Language differences between qualitative and quantitative research

To overcome the contamination caused by unacknowledged researcher bias, it is customary, in qualitative research, for the researcher to formally declare their perspective and beliefs about the research. This provides a lens through which the reader may understand and compensate for potential bias. The language used to write qualitative research is usually different than quantitative research and this can create a dilemma when writing mixed methodology research. As explained by Johnstone:

> Furthermore, the language of choice in my dissertation, as it is here, was the personal and relatively informal voice of a naturalistic researcher rather than the formal, impersonal voice that characterizes logical, positivist research reports. The personal voice is an acknowledgment that the researcher is a participant in the phenomena being studied, that he or she made choices in the course of the research that would have influenced what data were collected and reported, or not collected, and that the explanation that was finally offered was one that was unavoidably influenced to some extent by his or her own worldviews. (270)

The results of the qualitative section justifiably uses a different, more personal perspective than the objective voice used in the quantitative analysis of the survey.

3.5 RESEARCH METHODS

A clear distinction has been drawn between the theoretical underpinnings of qualitative and quantitative research methodologies. In turn, these theoretical issues provide structure and guidance for the research methods.

3.5.1 Qualitative research method

3.5.1.1 Choice of focus groups

Focus groups were chosen as the method of obtaining qualitative data. The reason for using focus groups rather than interviews was that participants may have felt vulnerable in an interview situation. The objective of the research may have posed challenging questions to participants, such as why did participants not use diagnostic schemata that had probably been taught to them as undergraduates and used by consultant psychiatrists with whom they had a working relationship. Focus groups would create a sense of comfort when discussing such issues.

A request for written responses to the initial wide research questions would have had considerable logistical difficulties, particularly with regard to participation. Such a data collection method would be particularly time consuming from the participants perspective. Further, there would be no opportunity to gain from the dynamic nature of focus groups with the associated 'group effect' of verbalised experiences stimulating conversation in others.

3.5.1.2 Semi-structured approach

Guidelines on using focus groups in general practice research were used to inform the design process (271, 272, 273). A semi-structured approach was used to focus the respondents on the task of the research. The construction of the guiding questions was further shaped by two other processes; the ethical approval application and a research reference group.

3.5.1.3 Logistical considerations

A conscious decision was made not to use an external moderator for the focus groups. As explored by Reventlow and Tulinius, the doctor as moderator in qualitative medical research presents both advantages and difficulties(274). A particular advantage is knowledge of the area under discussion. For focus groups with other doctors as respondents, the doctor as moderator is able to engage fluently within the

discourse of the group. The disadvantage is the medical perspective brought to the work by having a medical background and the unconscious impact this may have on framing questions and interpreting answers. However, all moderators, medical or nonmedical, will bring a set of assumptions and prior knowledge to the moderator role. As explained by the authors "The researcher effect is not just an issue for medically qualified researchers, but for all researchers". Richards and Emslie discuss the impact of the professional background of researchers on in-depth interviewing in primary care and conclude that a professional background does not exclude a moderating role but "the impact of professional background should be considered carefully when designing, carrying out and disseminating qualitative research" (275). For this research, the apriori knowledge and attitudes of the principal researcher were made explicit as a method of ameliorating the difficulty of researcher bias.

The principal researcher also had prior experience of running focus groups of general practitioners (276). This experience assisted in estimations of the number of focus groups that would be needed, the time required for each focus group and other logistical variables. It was decided to run three separate streams of focus groups; one with urban general practitioners, one with rural and one with general practitioners who work in Maori led primary health care clinics. The purpose of running these three streams was not to compare and contrast how each group differed in their responses, but to ensure that all relevant concepts were captured for analysis and therefore possible inclusion into the survey. All focus groups were 'double taped' using two tape recorders simultaneously to guard against machine malfunction. Tapes were then transcribed and the transcriptions returned for analysis. For facilitation of focus groups in Maori led clinics, a Maori mental health liaison officer was invited to lead the discussions. Focus groups were held in the later months of 2006. A total of 9 focus groups were held that included 34 general practitioners in the Waikato and Midlands region. Of these, four were urban, three rural and two with Maori led clinic.

3.5.1.4 Data processing and coding
Previous experience indicated that there would likely be around 150 pages of transcript. Therefore it was decided to use the qualitative software package NVIVO as a method of organising and coding data. The coding process followed the principles of template analysis. This method of coding in qualitative research was described by Crabtree and Miller (277). The authors explain the process: "The template organising

style involves coding a large volume of text so that segments about an identified topic (the codes) can be assembled in one place to complete the interpretive process"(p 166). They list the steps in the process as:

1. Creating a coding manual

2. Coding the text

3. Sorting the segments so that all similar segments are collected together

4. Reading grouped segments so that connections can be made between segments in a group

The creation of a coding manual can occur through four different mechanisms that the authors (in a different publication) have termed the template, editing, immersion/crystallisation and quasistatistical styles (278). Rationale for choice of style is also discussed by the authors who state "If the goal is theory testing (verification), then an analysis style with more structure and relational distance, such as template or quasistatistical, helps". The styles differ in the timing of classification and the process of organising. The unique aspect of the template style is entering the text with a classification scheme and simultaneously further developing the classification scheme as part of an iterative process. "The process of organising when using the template style involves using initial codes or categories to interact with the text; additional categories can emerge or old ones changed based on that interaction" (277, p 134)

King clarifies that template analysis represents a group of closely related techniques: "The term template analysis does not describe a single, clearly delineated method; it refers rather to a varied but related group of techniques for thematically organising and analysing data" (279 p 256). King further describes the process as the researcher producing a list of codes that represent themes identified in the data. Some themes are usually identified before data collection, others emerge from data interpretation or will be modifications of existing themes. A code is a label for an important topic and all section of text relating to that topic will be given the same label. King also describes the evolving hierarchical nature of codes as the analysis proceeds where groups of similar codes cluster to produce higher order themes.

Codes can be formulated either from the research questions or the data collected in template analysis. As explained in a paper discussing the use of template analysis in diabetic renal disease "...it is normal in template analysis to define a priori a number of themes that reflect areas identified as particularly salient to the aims of

the research project" (280). For this research, the a priori questions were those listed in section 3.5.1.2 above. Although a set of a priori codes exist, these do not represent the definitive codes. Punch describes how early codes inform the development of later codes: "The first labels also permit more advanced coding, which enables the summarising of data by pulling together themes, and by identifying patterns" (281 p176).Template analysis has been used in other research specifically relating to clinical decisions made by general practitioners (282, 283) and health professionals involved in treating those with anorexia nervosa (284).

In order to reduce interpretive bias, two full time general practitioners were asked to assist in the development of the coding template. Three transcripts were reviewed conjointly between the full time general practitioners and the principal investigator. Although ideally all codes used in the research would have been developed in this way, logistically this was not possible for issues of time, availability and money. This logistical problem is not unknown in qualitative research. Indeed Barbour wrote: "While I would caution against multiple coding of entire datasets (on the grounds of economy in both cost and effort), some element of multiple coding can be a valuable strategy" (285).

3.5.1.5 Data analysis

A General Inductive Approach was used for data analysis. Thomas compared the standard qualitative analytical approaches to data analysis (286):

Table 17. Comparison of qualitative analytical methods			
	Analytic strategies	**Outcome of analysis**	**Presentation of findings**
General Inductive Approach	What are the core meanings evident in the text, relevant to evaluation or research objectives?	Themes or categories most relevant to research objectives identified	Description of most important themes
Grounded Theory	To generate or discover theory using open and axial coding and theoretical sampling	A theory that includes themes or categories	Description of theory that includes core themes

Discourse Analysis	Concerned with talk and texts as social practices and their rhetorical or argumentative organization	Multiple meanings of language and text identified and described	Descriptive account of multiple meanings in text
Phenomenology	Seeks to uncover the meaning that lives within experience and to convey felt understanding in words	A description of lived experiences	A coherent story or narrative about the experience

The General Inductive Approach with its outcome of describing the most important themes was clearly the best fit with the research aim of describing how general practitioners make a diagnosis of mental illness and the utility of diagnostic systems in doing so. Thomas also gives a sequence of items in the process of inductive analysis:

Table 18. The coding process of inductive analysis

Many pages of text	Many segments of text	30 to 40 categories	15 to 20 categories	3 to 8 categories
Initial reading of text data	Identify specific text segments related to objectives	Label the segments of text to create categories	Reduce overlap and redundancy among the categories	Create a model incorporating most important categories
Development of analysis ⟶				

The development of analysis process as described by Thomas fits well with the concepts of template analysis discussed above where lower order codes can be aggregated to produce a smaller number of higher order codes that capture multiple themes of lower order codes. The general inductive approach has been used in other research projects on mental health (287, 288, 289). It would appear to provide a useful analytical process for examining the effect that systems have on how people work within such systems or how systems affect the care available within them.

3.5.1.6 Sampling strategy

The setting for all focus groups was the practice in which the general practitioners worked. This choice was made for several reasons; recruitment of general practitioners would be substantially easier, the general practitioners would feel more relaxed and comfortable in a familiar place and there would be less in the way of difficulties concerning power imbalances between researchers and participants. Selection of subjects was determined by identifying three homogenous groups of practitioners who may have slightly differing opinions on utility; urban general

practitioners, rural general practitioners and those working in Maori led clinics. It was felt important to ensure all three were included so that all relevant issues were revealed and accumulated. It was decided, in the interests of financial viability and time efficiency, to collect data across the Waikato and Rotorua regions and test the generalisability of the data to New Zealand general practitioners later.

The very limited number of Maori led clinics simplified the selection process as there were only two that had sufficient general practitioners to run a focus group. Outside the Maori led clinics, selection was based on desiring both urban and rural representation from across the region while ensuring feasibility. Four urban and three rural based groups were identified and recruited. A somewhat opportunistic method was used for one group where a peer group agreed to meet specifically to act as a focus group. All other meetings were held at a practice and involving only the general practitioners from that practice and were thus limited to practices where at least four participants could be expected. Initial contact was by phone after which a letter was sent outlining the research and what participating would mean in terms of time commitment. In total, 9 focus groups with 34 general practitioners were held. The methods chosen were robust in gathering information widely from general practitioners.

3.5.1.6 *Process of qualitative analysis*

The first three focus group transcripts were jointly analysed by three general practitioners, the author and two full time practitioners working in separate practices. The principle used to inform the development of codes was to understand the diagnostic process used by general practitioners when making a diagnosis of mental illness with particular reference to the use of diagnostic schemata. The questions used to structure the focus groups were developed into the a priori codes. The purpose of this initial analysis was to generate a set of initial codes by consensus to be used for coding transcripts. This analysis produced 22 primary codes:

1. Added experience in psychiatry
2. Availability of medication
3. Cultural resistance to depression
4. Culture influencing diagnosis
5. Culture influencing outcome
6. Differences between general practitioners and psychiatrists

7. Education
8. Inequalities in outcome
9. Liaising with other professionals
10. Making a diagnosis
11. Outcomes
12. Perception of variety of mental illness seen
13. Problems with current schemata
14. Requirements of new schemata
15. Resistance of patients to diagnosis
16. Rural specific issues in diagnosis
17. Socioeconomic background influencing diagnosis
18. Time constraints in diagnosis
19. Training in DSM
20. Treatment choices
21. Use of current schemata
22. Referring to secondary mental health services

All transcripts were then coded using these primary codes using NVivo software. Not all the above codes were considered relevant to the research topic. Codes were examined for both similarity and redundancy, similar codes were amalgamated and redundant ones discarded. Distinct groupings emerged from reviewing the codes:

- Use of diagnostic schemata in general practice
- Making a diagnosis of mental illness
- The purpose of diagnosis
- Culture influencing diagnosis
- Interacting with secondary care
- Perceptions of mental illness seen
- Requirements of a new schemata

The data will be discussed in the next chapter using these headings.

3.5.1.7 Data excluded from the coding template

The iterative process of developing the coding template outlined above ensured that all relevant data could be captured in the coding process. As commented by King "...no template can be considered 'final' if there remain any sections of text which are clearly relevant to the research question, but remain uncoded" (271) (p 263). If it was considered that the raw data contained relevant information not already captured by an existing code, a new code would be created for this theme. Transcripts were read several times to ensure no relevant data was lost. All raw data uncoded at the end of this process was considered redundant to the research questions and did not undergo further analysis.

3.5.1.8 Use of quotations when reporting on qualitative research

It is usual when writing up the results of qualitative research to include quotations from the research participants. Sandelowski proposes several distinct reasons as to why quotations are used when reporting qualitative research; to provide evidence for a particular point, to illustrate an idea and to convey emotional content (290). A qualitative study with experienced qualitative researchers on why they used quotations found similar but more complex results (291). Presenting discourse in large segments of text, presenting quotations as evidence, presenting spoken words for explanation, using quotations as illustration, using quotations to deepen understanding, using spoken words to enable voice and using quotations to enhance readability were all held to be valid reasons for including quotations in reports. In this thesis, quotations will be used to illustrate particular themes and to provide evidence for interpretation of the data.

3.5.2 Quantitative research method

3.5.2.1 Choice of postal survey

The methodology appropriate to this research has been previously defined as a descriptive study to collect information from a sample of a described group to make general statements about the group. Brown defined a survey as any research design in which the same variables are measured across a sample of subjects (292 p 117). The advantage of measuring the same variables across the sample population is that the data can be analysed for an indication of generalisability of the findings to the wider population. Brown describes a variety of survey techniques; face-to-face interviews, telephone surveys, mail surveys, email surveys and internet surveys. The particular

features of mail surveys is that they are relatively cheap, eliminate interviewer bias, participants can complete at convenient times and, if anonymous, there is more honesty over sensitive issues. The disadvantages are time considerations and potentially low response rates. For working general practitioners, face-to-face interviews and telephone interviews would have been logistically difficult. An email survey would have required obtaining email addresses, many of which may have been inaccessible. A postal survey was therefore chosen as the most suitable method of data collection .

3.5.2.2 Design of the survey

A guiding principle for the survey was to limit the length of the document to two sides of A4 paper in the belief that a short survey with a stamped addressed envelope would improve the return rate. The content of the survey was dependent on the results of the qualitative phase of the research apart from requesting demographic data and information concerning frequency of use of diagnostic systems. A decision made at the beginning of the project was both to make the survey anonymous and use a single pass process. The purpose of the anonymity was to safeguard participating general practitioners should the survey reveal sensitive information about them. The rationale behind using a single pass process was to reduce logistical difficulties with regard to time and to reduce complexity inherent in recording anonymised returns in a way that would both assure anonymity and allow identification of non-responders. The survey was tested on 22 general practice registrars. After completing the survey, a discussion was held during which each question was debated for clarity of purpose. Some modifications were made accordingly to the wording. A copy of the survey is attached as Appendix 1.

3.5.2.3 Sample size

Literature would suggest that overall response rates for surveys reported in medical journals is about 60% with the rate being somewhat lower for medical professionals (54%) and higher for non-medical professionals (68%) (293). It would appear that general practitioners have an even lower response rate; a Swiss study achieved a 33% initial return rate in a survey to 2,000 general practitioners (294). Similar response rates were found by Barclay et al in a survey of 600 Welsh general practitioners; 37% on first mail out (295). If the subject being researched is of particular interest to the general practitioner, the response rate is likely to be higher (296). Names and

addresses of all Fellows of the Royal New Zealand College of General practitioners were obtained. There were 2,964 Fellows registered. An estimation of the number of replies needed to observe differences between groups was calculated on the basis of a 40% return rate.

In this research, the more important analysis would be based on the entire sample, such as comparison of study population demographics with national demographics. For such data, a power calculation is a useful method of estimating sample size. The objective of undertaking a power calculation is to predict and reduce the error rate in a test. As explained by Cohen, "What we want to know is, given these data, what is the probability that Ho [null hypothesis] is true?" (297). A complementary view expressed by Bartlett, Kotrlik and Higgins was "Generally, these survey designs try to minimise both alpha error (finding a difference that does not actually exist in the population) and beta error (failing to find a difference that actually exists in the population)."(298). As the power of the test increases, the chance of error decreases. However, if the sample size is increased, the cost of acquiring data also increases. Calculation of the sample size may be undertaken by calculating a formula, by reference to tables or using sample size calculators. Regardless of the method of deriving the sample size, several variables need to be considered. The size of the population that is being sampled is necessary and is usually known. The confidence level has to be chosen and this is usually set at plus or minus 5% for categorical data whereas for continuous data, a 3% margin of error may be advisable (299, 300). The confidence interval is another variable that needs to be chosen; a value that is commonly used is 95%. The calculator used for estimating the sample size for this research is offered on line by Creative Research Systems (301). The formula used is:

$$ss = \frac{Z^2 * (p) * (1-p)}{c^2}$$

Where

ss = sample size

Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal (.5 used for sample size needed)

c = confidence interval (5%)

The confidence level represents how often the true figure lies between the confidence interval. The confidence interval is a plus or minus figure that is associated with the result. For this research, using the confidence level of 95% and confidence interval of 5%, there is 95% probability that the true figure lies between plus and minus 5% of the result. The p value in the above formula gives maximal sample size when set at 0.5. The p value represents the degree of variance in replies of respondents. If it is unknown what the variance will be, or high levels of variance are expected, the sample size should be maximised. If 'clumping' of respondent replies can reasonably be expected, the p value can be adjusted accordingly and the sample size decreased.

The sample size calculated was 40% of the total surveys that would need to be sent. At a confidence level of 95%, a confidence interval of 5%, a population size of 2,964 Fellows of the R.N.Z.C.G.P. the sample size (ss) was calculated at 340 for data that compared two or more groupings of the sample. With an estimated response rate of 40%, the number of requests to participate was calculated at 850. A decision was made to enlarge this to 1,000 because of the marginal cost increase of doing so and mitigate risk of a lower than expected return rate. Thus the sample size, based on a 40% return rate, would represent about 13% of Fellows.

Choosing a confidence level of 99% rather than 95% significantly increases the sample size needed (ss = 544 rather than 340) but gives greater certainty that the sample size will give correct results by reducing Type 1 errors. Similarly, decreasing the confidence interval to 2.5% gives greater certainty of results but at increased sample size (ss = 1017).

3.5.2.5 Non-responder bias
Of critical import is the degree to which the responders match the population from which the survey participants are purported to represent. A review of why general practitioners do not respond to surveys indicated that non-responders were likely to be older, more experienced, single handed and less well qualified (302). Non-response bias implies that the respondents would differ in some significant way in their responses if they had replied to the survey. Barclay et al suggest that some degree of confirmation should be sought regarding demographic variables that would permit a

comparison of responders to the population that is being sampled (287). This would, if the two groups were essentially similar, be reassuring that there was negligible non-respondent bias. Therefore, basic demographic data would be collected for estimation of non-respondent bias.

3.5.2.6 Logistical considerations

National workforce data that identified all vocationally registered general practitioners was obtained for the year 2006 from the Royal New Zealand College of General Practitioners. The data contained both name and work address. A random number generator was used to randomly select 1,000 of the 2,964 vocationally registered general practitioners. The survey was posted in February 2007. A conscious decision was made not to use inducements to increase the return rate. There was sufficient data on return rates available from overseas studies that did not include inducements to be confident that the return rate without inducements would meet expectations of data sampling as suggested by the power calculation. This avoided the extra expense of an inducement.

3.5.2.7 Data entry

Data was entered by a 'summer student' university student on a three month grant to assist with the project. One in 10 entries was double checked for accuracy. Data was entered to SPSS version 10. Expert statistical advice was sought regarding choice of statistical analysis for the data set.

3.6 EVALUATION OF THE SURVEY

Two aspects of survey evaluation will be discussed in detail; the concepts of reliability and unidimensionality. In survey evaluation, it is it is good practice for both these variables to be evaluated as exemplified by a number of health related studies in areas such as patient satisfaction, patient experiences of health care and health evaluation (303, 304, 305).

3.6.1. Reliability

Litwin suggests and discusses three methods of establishing the reliability of a survey; test-retest, alternate form and internal consistency (306 p 8). All three are amenable to calculating a correlation coefficient. Test-retest reliability requires the same respondents to undertake the same test at two different times and to calculate the

correlation between the scores. Drawbacks to this method include the time scales required to undertake two separate stages of data collection, added expense and, for this survey, the difficulties of requesting busy clinicians to complete the same survey twice. A well known flaw of this method is the 'practice' effect where respondents will answer the second test based on what their remembered response was to the first test.

Alternate form reliability testing requires different worded questions that measure the same variable to be included in the survey or tested in a separate survey to the same respondents. A variation to the alternate form method is to divide the respondents randomly in half and administer each form to one of the halves. The correlation between these paired items can then be calculated. Potential difficulties with alternate form testing include creating different forms of a survey question that have identical levels of language and meaning, time issues and expense if the alternative of presenting the alternate form at a second survey is chosen.

Internal consistency is a commonly used measure of reliability in psychometrics and Cronbach's alpha the most commonly used method of measuring internal consistency (307, 308). Internal consistency has distinct advantages over other methods of estimating reliability as the technique is a statistical operation performed on a data set with no requirement for administering the survey more than once or devising alternate questions. Despite the popularity of using Cronbach's alpha, care should be taken to recognise the limitations of the technique. As the number of test items increases, Cronbach's alpha increases irrespective of the degree of internal consistency (309). Thus a low number of test items will adversely affect alpha. In general, it is difficult to obtain an acceptable alpha if the number of items is below 10. Also, the test is a mathematical model of the concept of internal consistency. It could be assumed that internal consistency should range from no consistency to fully internally consistent and scores therefore range from zero to 1, it is possible for the result of the calculation to yield a negative value (310). Although there is debate concerning what level of internal consistency is desirable in surveys, a BMJ paper on statistics in medicine suggests an alpha of 0.7 or above is acceptable for surveys(311). This notion is supported by other researchers (312, 313).

3.6.2. Unidimensionality
A further limitation to using Cronbach's alpha highlights the difference between internal consistency and unidimensionality. If there is one unifying factor, then alpha

will measure unidimensionality. However, a test with several unrelated factors can have a high alpha despite a lack of unidimensionality (314). Cronbach's original paper, in which the formula for calculating alpha was stated, suggested that if several independent factors were found in the data, each factor should be treated separately for calculating internal consistency (315). An assumption made when calculating reliability is that the items measure a single phenomenon equally. Data can violate this assumption if items in a survey measure a concept unequally or if the items measure more than one concept (316 p 59). It is therefore important analyse the data for the number of components before accepting results from calculating alpha.

3.6.2.1. Factor analysis as a method of measuring unidimensionality

Factor analysis is a group of methods of either reducing the number of variables (exploratory factor analysis) or identification of groups of inter-related variables (confirmatory factor analysis). The purpose of undertaking a factor analysis is "...to identify the interrelationships among a large set of observed variables and the, through data reduction, to group a smaller set of these variables into dimensions or factors that have common characteristics" (317 p2). Methods of examining data for factors can be divided between common factor analysis and principal component analysis. The two approaches differ in how error of a single item in a survey is treated. In principal component analysis, the error of a single item in a data set is not factored out while the reverse is true of common factor analysis (p 89). Principal component analysis has been described as "... a way of identifying patterns in data, and expressing the data in such a way as to highlight their similarities and differences" (318). The choice between common factor analysis and principal component analysis as an analytical method depends on assumptions made about the data. As explained by Widaman, if the researcher suspects there are latent factors in the data, common factor analysis is appropriate whereas principal component analysis should be used if no assumptions about latent factors in the data are being made (319). This research makes no assumptions about latent factors and therefore principal component analysis was planned to assess the unidimensionality of the survey. An alternate view on the choice between common factor analysis and principal component analysis is that there are sufficient similarities between the two methods to make the choice somewhat arbitrary. As stated by Velicer and Jackson in a review of

the selection decision between these two analytical methods: "The high degree of similarity between the results of either a component analysis or factor analysis is the basis of the major conclusion that the choice of method is unlikely to result in any empirical or substantive differences" (320 p 23).

3.6.2.2. Sample size and variable numbers

Care must be taken over several parameters when using factor analysis or principal component analysis. The question of adequate sample size has been debated at length in the literature. A review of sample size in factor analysis was undertaken by Lingard and Rowlinson (321). Three separate methods of calculating adequate sample size have been described; calculating a ratio of subject numbers to numbers of variables (with suggested ratios from 2:1 to 20:1), an absolute number and calculating a ratio of subject numbers to numbers of factors

A breakdown of recommendations regarding minimum respondent numbers by the same authors revealed 31 papers of which the majority (41%) recommended a minimum sample size between 61 to 99. The most exacting of recommendations regarding sample size by Comerey and Lee provide a guideline where less than 100 subjects is considered poor, 200 is fair, 300 is good, 500 very good and 1,000 is considered excellent (322 p 217). The sampling technique for this research was designed to give approximately 400 replies and would be considered good to very good by such criteria.

The maximum number of variables in each analysis for this research was likely to be less than 10. Again, Lingard and Rowlinson provide data regarding recommendations regarding number of variables and sample size. They found 58% of 31 papers suggested a ratio of subjects to item of between 5:1 and 10:1 and only one paper suggested a ratio of greater than 20:1. For this research, variable numbers for each analysis were expected to be less than 10. With expected subject numbers to be around 400, the ratio for this research would be 40:1, a reassuring ratio.

3.6.3.3. Interpreting the results of factor analysis

Two methods have gained popularity in interpreting the results of common factor analysis or principal component analysis:

1. Cattells Scree Test: When the drop ceases and the curve makes an elbow toward less steep decline, Cattell's Scree Test suggests dropping all further

components after the one starting the elbow (323). This rule is sometimes criticised for being amenable to researcher-controlled "fudging" as the definition over what point comprises the elbow is contentious.

2. Kaiser criterion: The Kaiser rule is to drop all components with eigenvalues (variance in all the variables which is accounted for by that factor) that are under 1.0 (324).

A number of other methods have been devised, but Cattell's Scree Test and the Kaiser Criterion are the most commonly used. The choice of method to interpret results is dependent on the research question and the approach of the researcher. In this research, it was considered to take an approach that was as objective as possible and adhered to accepted practice. Catell's Scree Test could be criticised as being more open to subjectivity, and therefore convenient to the researcher, than the Kaiser criterion approach and were thus discounted. The Kaiser criteria was used in the analysis whereby factors with Eigenvalues greater than one were included and less than one were excluded.

3.6   SUMMARY

Answering the research questions would require understanding of opinions and perceptions of general practitioners, as a group, on diagnosing mental illness and use of diagnostic systems for mental illness. The complexity of the subject matter required identification of key issues before attempting to understand the prevalence of opinion of these issues. Qualitative research was the obvious choice in identifying the key issues and quantitative research the obvious choice for understanding the relative importance of these key issues to the larger general practice community.

There are strong conceptual differences between qualitative and quantitative research and it behoves the researcher to be aware of these differences and how they can influence the research process. However, using both theoretical perspectives (mixed methodology) can add significant value to the research. A framework has been described that allows discussion of the theoretical background to both qualitative and quantitative research.

The research methods of both focus groups and surveys have been discussed from logistical and theoretical considerations. Principles of data analysis appropriate to each of the methods have been presented. A total of 9 focus groups were held with groups of general practitioners throughout the Waikato and the results analysed using

the principles of template analysis. The analysis was used to inform the development of a survey that was sent to 1,000 general practitioners. The survey results were analysed for reliability of the survey instrument.

CHAPTER 4 – RESULTS

4.1   INTRODUCTION

This chapter will describe the results of both qualitative and quantitative sections of the research. The following will be established:

- General practitioners seldom use, and have low overall knowledge of formal diagnostic systems.
- The available diagnostic systems are considered too complex and do not assist with management decisions.
- Diagnostic checklists such as the Beck Depression Scale are used occasionally.
- Clinical intuition is a common method of diagnosing mental disorder.
- Historical information concerning the patients past history and previous interactions with the general practitioner are important in developing clinical intuition.
- Patient factors, including cultural background, strongly influence the diagnostic process.
- Reasons for diagnosis include interprofessional communication and assisting in management.
- Resistance of a patient to a diagnosis of mental illness may shift the behaviour of the general practitioner away from formal diagnosis.
- The psychometric properties of the survey will be described.

4.2   QUALITATIVE RESULTS

As detailed in section 3.5.1.3, a total of 34 general practitioners in 9 focus groups were recruited for the research with four urban groups, three rural and two in Maori led clinics. The qualitative data was classified under the following headings and subheadings:

Use of diagnostic schemata

Making a diagnosis of mental illness

Making a diagnosis

        Diagnosis assisting management

        Referring to secondary services

        Medico-legal imperative

Resistance to diagnosis

The purpose of diagnosis

Culture influencing diagnosis

        Cultural resistance to depression

        Culture influencing diagnosis

        Culture influencing outcome

Requirements of new schemata

Other aspects affecting the diagnostic process

Time constraints

        Refer to secondary mental health services

        Rural specific issues

        Differences between general practitioners and psychiatrists

        Inequalities in outcome

        Perceptions of types of illness seen

        Time constraints in diagnosis

        Availability of medication

        Education

        Socioeconomic background influencing diagnosis

4.2.1   Use of diagnostic schemata in general practice

4.2.1.1 Little use of schemata

The respondents indicated that diagnostic schemata are hardly ever used in general practice.

Never use it.

I wouldn't have a clue what was even in it.

The only identified use for diagnostic schemata was to understand letters from psychiatrists.

I have never used the guide apart from when I have referred
someone to a psychiatrist and they send a letter back using the
diagnostic criteria and then I sometimes go and look them up just
because I don't really know what they mean.

There was strong consensus that the schemata were not used by their general
practitioner colleagues.

Q: How widely do you think in general that these
classification systems are used by average general practitioners?

A: Not at all.

One respondent indicated that she did use DSM-IV but that her previous medical
experience included several years of psychiatry in secondary care. Although READ
codes are available and an integral part of many computerised patient management
systems, they were considered not to be of particular value and were infrequently used
in a systematic way. READ codes provide a method of recording a diagnosis but do
not assist in making a diagnosis.

4.2.1.2 Accessing schemata
It would seem that general practitioners perceive a range of difficulties with using
diagnostic schemata. Clearly there are issues of availability of schemata in that
obtaining copies of DSM-IV or ICD is perceived to be both difficult and expensive.

I have heard they can be bought at great expense, $300 American
dollars or something, and you can't get access to them online, they
are restricted.

They are research tools, rather than being useful in practice.

The only classifications that I use are the READ codes that are on
the PMS system.

4.2.1.3 Knowledge about schemata

Few of the participants had any meaningful experience with using schemata and there was an acknowledged lack of information as to what was in the schemata or how they functioned.

> Well I would've seen it probably 10 years ago and I wouldn't have seen it since.

> I wouldn't have a clue what was even in it.

> Not particularly useful. To start with I am not particularly aware of what is actually in them to be honest, so I don't really use them much. The only time I see them is correspondence letters from psychiatrists.

> I know that they come back on the discharge notice, and stuff. Yes, that's very nice to look at, but we don't know any better. Fortunately, most of the diagnoses make sense in that they are descriptive you know, but how somebody came to those diagnoses we don't know.

4.2.1.4 Concerns over reliability

Several comments were made about the lack of reliability in use of coding from secondary care.

> If there was a consistency in using DSM-1V on the front page [of a discharge summary], I guess, that might be something that you become more comfortable with time or – but there is a variable level of discharge summaries, some of it is good and some of it is not so good, and some of it is non-existent at all. So, if [name of DHB] were to fix some of the particular diagnostic criteria set, and use it consistently and throughout, whether that might – we might get more used to dealing with it.

Disquiet was also expressed over the lack of stability of coding for patients shared between general practitioner services and secondary services.

> What one person calls schizophrenia and another person calls
> schizoaffective disorder or whatever, because every time you go
> and see a specialist you get a different diagnosis

4.2.1.5 Concerns over validity

There were also instances recounted of significant patient and family distress where general practitioners seemed to struggle between the complexity of significant behavioural problems in a dysfunctional social situation and the dichotomous nature of diagnosis.

> … the DSM criteria come into none of this because immediately
> they walk in the door, I feel hopelessly overwhelmed and out of
> my depth by these sorts of families, which there are quite a few,
> dual diagnosis again, hopelessly overwhelmed by a feeling of
> helplessness and for all the diagnostic criteria in the world, I get
> this feeling of ... goodness me, you know, we are on a road to
> nowhere and no matter who is involved here.

There were several comments that indicated continued use of low dose tricyclic antidepressants by general practitioners. There were also comments that indicated awareness of the controversial nature of such therapy.

> Like putting people on to intermediate doses of tricyclics which the
> psychiatrist says "oh you are not doing anything here", whereas we
> tend to in general practice think, I do. Sometimes that intermediate
> doses seem to actually have a meaningful effect.

One reason given for continued use of this particular therapeutic manoeuvre was the perception that advice regarding appropriate dose of these medications was based on secondary care data that was not valid for primary care.

I guess we may be treating anxiety if you are using tricyclics, and treating depression, or it may be that some people do respond to a lower dose and maybe those people never get to a psychiatrist in the first place. Psychiatrists do seem to see the more extreme, more severe cases, particularly cases like depression and anxiety, because the more mild cases are being dealt with at primary care level.

There is awareness in these comments that lesser forms of mental illness may exist outside the parameters of mental disorder seen by psychiatrists and that perhaps are not represented in formal diagnostic structures. This represents a dimensional rather than categorical way of thinking about mental disorders.

I mean with someone with a major depressive disorder I don't think medium dose tricyclics would be appropriate, but if you are just wanting that kind of feel the fact that seems to go along with some of the low dose tricyclics that just generally makes people feel a bit better and helps with all kind of ailments and yeah.

There was a perception that not only do psychiatrists see a different range of mental illness than general practitioners but also that the DSM system does not recognise some of the mental illness that is diagnosed and managed in general practice without involvement of specialty psychiatric services. Instances were related of consultations that were considered to have a component of mental illness by the general practitioners yet there was the belief that standard diagnostic criteria would not acknowledge such presentations as illness.

I am sure a lot of depressed and anxious people we see don't actually meet DSM criteria for generalising anxiety disorder or a major depressive order, I am sure there is much milder versions of it.

The term 'artificial' was used several times in describing how general practitioners felt about using such coding systems.

> I see it as being overly complicated, I see it as being a bit artificial
> in that if someone doesn't need the time criteria for a particular
> illness, I am not going to wait two extra weeks until they meet the
> criteria before I start them on appropriate medicines, so it is there
> as a guide; having said that, a guide I don't use very much.

The origin of schemata was considered to lie with psychiatrists who were devising diagnostic methods specifically to meet requirements of diagnosis in secondary care psychiatry as well as research and other academic work.

> I suspect the criteria were written by partialists who receive a
> filtered population that already have been worked over by other
> people from primary care …

It was therefore felt unsurprising that such schemata translated poorly into a general practice setting. Coding was not considered to assist in choice of medication or management beyond how general practitioners would usually function. The rigidity of coding did not allow for the very individual presentations of illness seen. Using diagnostic schemata may interrupt the flow of a consultation. A young and relatively inexperienced general practitioner commented:

> … the patient comes and talks to you and then to try and fit it into
> the DSM-IV criteria and try and ask them about really specific
> things to make sure that they fit the diagnosis, it just, what I have
> noticed it doesn't flow well. The patient is telling you something,
> and then you have got a bunch of closed sort've ended questions to
> try and fit them into the box.

4.2.1.6 Informing patient management

There was a strong sense that diagnostic codes had little impact on treating mental illness by general practitioners. Failure of the coding systems to inform management was considered a substantial drawback.

> I just want to know what the diagnosis is and what the treatment is and what the plan is, the numbers or codes doesn't mean anything to me …

4.2.1.7 Complexity of schemata

There would seem to be a limited range of mental illness with which general practitioners are comfortable to diagnose and treat without input from secondary services. This narrow scope of illness is, however, also associated with significant incidence and prevalence of disorder within the scope.

> I would agree with [Name of another focus group member], I would diagnose depression as depression and anxiety and stress, probably I don't know, 10 times a month, oh probably more, but I wouldn't have diagnosed a psychotic illness for at least five years.

> … but I think the depressives in my experience are far and away the most common things that we see in general practice.

> … my personal classification of mental illness is probably pretty limited. I don't basically, I could count them on one hand what I would put down as a diagnosis.

Although the conversations ranged across many aspects of mental illness, depression and anxiety were most commonly mentioned and there was considerable emphasis on these two conditions throughout the focus groups that arose spontaneously from the participants. Illness such as substance abuse and eating disorders were infrequently mentioned. There was little perceived need to have a coding system to distinguish between subtypes of this limited range of illness.

4.2.2   Making a diagnosis of mental illness

There was awareness in the participants of the variability of presentations, the effect that such variability had on the ability to diagnose and the interaction between patient and doctor on the diagnostic process.

I guess it is the way they present their symptoms complex and I guess my perception of how they are going to look at or what I am going to say them, in terms of their diagnosis, and then structure that how we lead into that depending on how I see it.

4.2.2.1 Eclectic methods of diagnosis

The data suggests that the issues and processes involved in making a diagnosis of mental illness are complex, variable and tacit. There was shared understanding that the diagnostic process in general practice was poorly described formally.

Yeah, I mean I guess the thing is one doesn't think about how one diagnoses I suppose.

On one hand, occasionally the diagnosis is given by specialist psychiatry services before involvement of a general practitioner (such as in acute psychosis where sectioning is necessary) leaving little in the way of involvement of the general practitioner in diagnosis. Patients can spontaneously raise the issue of mental illness and with resources so easily available on the internet, arrive at the general practice surgery with detailed reasons as to why they may have a mental illness.

Quite often the patient actually tells you don't they, I mean quite often people actually come in and say "I think I am depressed doctor", "Why do you think you are depressed", "I can read it on the internet or it has happened to me before, and also somebody has given me this checklist and you know I ticked all the boxes", so I would say, for me, it is quite a large component coming in.

At the other end of the spectrum, many 'soft' clues assist the practitioner to understand that there may be issues of mental illness in the consultation.

I find that difficult to answer [how does a general practitioner diagnose mental illness] because it is so variable and sometimes a patient will say, sometimes a relative will phone expressing concern, and sometimes things just won't add up …

I mean sometimes you just get a feel for things I think, people
might present you know, somatising their symptoms, you start to
think, hey, you know this doesn't quite make sense what is going
on here, and you know it can sort of lead you on to make a
diagnosis of depression.

Alongside the awareness that 'gut feeling' was a diagnostic process used was a sense
that perhaps this was not the optimum method of diagnosis.

I guess working on hunches is probably not the right way of going
about things.

Several respondents discussed 'automatic screening' that they believed occurs in
general practitioners, particularly for depression.

I am pretty sure when I have got somebody who is depressed, you
don't have to go through a checklist for sure when it is depression,
because you are automatically going through that in your mind,
you know. As a general practitioner you are doing that without
having to consciously go down the list, you are already doing that,
your mind puts it altogether.

4.2.2.2 Disability

The theme of impairment in normal functioning emerged as an important factor in
what may alert general practitioners to the presence of mental illness and/or emotional
distress. Lack of impairment in functioning is likely to be associated with a more
cautious approach to making a diagnosis.

Yeah, I guess function is a really important thing, yeah, are they
actually functioning in spite of what is happening, how they are
feeling or what is happening, is actually a meeting ground hold,
what sort of real things are happening in their life because of this?

> … if someone is really quite unimpaired, and it was recent onset, I would be less hasty about it [making a diagnosis], because things are often not very clear in general practice no matter how hard you try to fit it into the criteria.

> I guess an impairment in their normal functioning, be it unable to do what they normally do, and feeling out of control …

A sense of 'male bravado' was apparent in the focus groups where some male patients would deliberately downplay their level of disability caused by their emotional state.

> You still get the guys, particularly men who seem to be, yeah, not admitting the amount of disability that they are suffering, but their partners have been nagging them, their workmates and others.

Disability seems to provide a 'measuring stick' of severity of symptoms and as such introduces a dimensional element to the act of diagnosis. Disability would seem much more easily detected and contexturalised with prior knowledge of the patient or family. The family context may not affect the diagnostic process as such but may be influential in management.

> … especially if you know the patient's family background and how they are functioning.

> Whereas with this family I am talking about I think they just sort've accept that, it is just her, and get on with it, and it doesn't create a barrier, whereas in other families I think, people would be more anxious, that would create isolation.
> Q: Would that alter how you diagnose?
> A: No, but it certainly alters how you manage.

Disability would seem to be context specific. Similar symptoms may have different meaning depending on the background knowledge of the patient available to the doctor.

4.2.2.3 Distress

Distress was also spoken of as a sign that mental illness may be present. The degree of distress was also an important cue that was looked for and gave useful information concerning possible intervention.

> One of the things I always think about, is how distressing is this for the patient or the family?

> I guess what I meant is that as with any mental illness, if you are going to make a diagnosis, the severity of that illness then affects everything to do with your management, so it is a very important aspect of trying to diagnose something, and yeah, I guess it is more once you have diagnosed them I guess, the functionality becomes important.

> … helps you get a handle on it, the seriousness of it.

Again, similar to disability, the level of distress adds a dimensional component to what is happening. Similar to both distress and disability is the severity of symptoms. The severity would seem an important dimension in informing management.

4.2.2.4 Pattern recognition

A sense of knowledge about the patient from a historical sense does appear to offer important information. Exclusion of physical illness by history, examination or laboratory tests is also an important and useful ploy. There was an awareness of clinical intuition or 'diagnosis on minimal cues' for some respondents.

> Do you sometimes have those gut feelings, it's a horrible term isn't it, you do kind've learn to let it up, I think, and get the feeling that

> somebody is depressed or that they are psychotic or that their
> thinking is a bit disordered when you've started talking with them
> for a few minutes sometimes, sometimes they make you feel
> depressed, and you think well that probably is a pretty good
> pointer.

There was also insight into the processes involved in clinical intuition. Some participants openly talked about pattern recognition, experience, reflection on experience specifically in a general practice context, trial and error and learning from the results of over referral.

> I am sure a lot of what we do, is pattern recognition, someone
> comes in and you just see the overall picture and you think, right
> they are depressed, ask a couple of questions to confirm your
> suspicion and then you are away.

> A constellation of symptoms, when you are making diagnosis of
> mental illness, it is in our mind, our line of questioning will follow
> that through to try and establish whether it fits the pattern sort of
> thing.

> I think I called the CAT team more in my first year in general
> practice than I ever have since.

4.2.2.5 Diagnosis by exclusion

Part of pattern recognition is the circumstance of symptoms making little sense from a physical disease stance and therefore mental health issues are pursued.

> But generally when a patient presents my focus is basically
> exclude the organic cause. Once I have excluded all of those, then
> we're not dealing with a medical or physical condition, we are
> probably dealing with supratentorial.

4.2.2.6 Patient's beliefs influencing diagnosis

The perceptions of general practitioners on how patients think about having a diagnosis revealed a complex picture:

> Oh, I think some patients like to have a diagnosis so they can identify with that, and actually get on with it as well. Some patients would rather not have a diagnosis because it could affect their insurance and things like that, you know, and that is real, yeah, so I guess everybody is different, for some people I guess attaching a label and making a diagnosis is something that can be beneficial for the person, and you know, being patient centred, that could be beneficial for the person and in other cases it is not necessarily, in some cases people are not ready to accept the diagnosis either and maybe need a bit more time, even though you might be thinking that is what is going on, attaching a diagnosis isn't necessarily acceptable to the patient.

Here, the participant places the beliefs and desires of the patient above the imperative of making a medically correct diagnosis. Not only is the readiness of the patient to accept a diagnosis considered, but the adverse effect on insurance policies as well as the potential effect on the psychological health of the patient is considered. It would appear that the patients desire to have a label attached to their experiences is one reason why general practitioners will make a diagnosis.

Patient resistance to diagnosis clearly influences how a general practitioner will conceptualise the presenting problem and how they will manage it.

> One thing I think I guess I take into account, is my perception of how they will see it, you know a lot of people don't want to know about depression so you just never mention the word, but you go all around it and call it low mood and stress, and all these sorts of things and try to get them to accept that there is a mental change going on if you like, but if you hit them with depression straight

off, you know, the walls would go up and the shutters would go

down and then you could sort've kiss them goodbye …

It would appear that the same set of symptoms may result in a different diagnosis (stress versus depression) according to the acceptability of mental illness as a diagnosis to the patient.

4.2.2.7 Checklists
Occasionally checklists prove useful such as Beck Depression Scores. As well as using them as a diagnostic aid, it would appear that the usefulness of such checklists includes convincing those with significant symptoms but resistance to diagnosis that mental illness may be the cause.

I quite often find it demonstrates to the person the degree to which

they are actually suffering from their anxiety or depression.

Other reasons for using checklists included reaffirming in an objective way the reason for distress.

Yeah, well even if they are convinced, or say, look I think I am

making a fuss over nothing and if you give them a score and say,

well if your HAD score is actually over 20, and 11 to 19 is

considered significant, so it is not surprising therefore you're

feeling awful often they have tears of relief from women anyway.

The scoring systems were also used when there was a degree of uncertainty about the diagnosis.

Occasionally using checklists can be helpful, I don't use them very

much, I don't know about you guys, the hospital depression rating

scale, …, just once or twice I have found them useful, you know

there has been somebody I have been generally unsure about.

The discussions revealed low overall use of such lists. Of those who did occasionally use them, the Beck Depression Score and the Hospital Anxiety and Depression score were the only ones mentioned. Informal checklists were used by some general practitioners although there was no indication of validity or reliability of such checklists and indeed there would very likely be no measure of either.

> … like depression you get so much of this that you have got your set of, you have got your classification, I have got my classifications in my mind, you know, because I see it so much, but they are um, I guess over the years I have made a list, and it is not necessarily, I may not be 100% sure if it is still exactly the same as what is in those criteria, probably is, but and so yeah, I guess the list that I have got are derived from those lists anyway.

> I have got my own set of things in my head which I have sort've collected over the years, and I will go through them, not sleeping or eating, this and that, I will go through those in my head and check it out with the patient, document all that, and then come to my diagnosis.

4.2.2.8 Guidelines

Overall it was apparent that guidelines were seldom used as a diagnostic aid. There was understanding over the difference between guidelines and diagnostic systems, in particular the limitation of diagnostic systems over issues of management. Even though guidelines were very seldom used, there was recognition of their usefulness.

> I mean in terms of classification sometimes I think guidelines are better than a classification. With classification I just see something DSM, which just say, if you have these problems you have this classification, whereas guidelines I see as more the complete picture, which says, how to diagnose, what treatment options are and it follows it through a little bit more, so general guidelines would be of more use.

Yet there was belief that guidelines were for difficult cases where the management was problematic.

> Yeah, I mean if it is like the guidelines that are around at the
> moment, I mean, I by no means use them with every patient, but if
> you see a tricky patient, and think oh gee what should I do, then it
> is nice to have the guidelines there and refer to them.

There was, however, a message that guidelines should limited to those diseases that are of particular relevance to general practitioners.

> The other thing that I think might be useful might be some
> guidelines for depression, anxiety, childhood adolescence and in
> the elderly.

A warning was also given about failure of past guidelines to have any meaningful influence on practice.

> Yeah, it would probably be the case of too many guidelines in the
> past that haven't been useful and practical. So they get shelved and
> never seem to get used, so if it is a good guideline, if it is a good
> classification system, it will find its way into use.

4.2.2.9 Past history of mental illness

Previous episodes of mental illness were mentioned as a cue that increased the degree of suspicion that current symptoms may be due to mental illness.

> So when it does come down to making a diagnosis of mental
> illness, what are the factors that you take into consideration in
> making the diagnosis?

> Well, past history, yes with things like depression, have they had
> episodes like this before, no, or was this just a one off?. Social
> problems?

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4.2.2.10 Usefulness of formal training

The experiences and training in undergraduate years were hardly mentioned in the discussions. Post graduate training in general practice was thought of as helpful but continuing professional development was not considered to meet the needs of the general practitioner in dealing with mental health issues.

> For me, I went along to one of those psychiatry ones [continuing professional development] and I gained nothing from it.

There was clear acknowledgement that a wealth of information was available to the general practitioner that was not necessarily overtly incorporated into the diagnostic process but was important and informed both diagnosis and management.

> See a lot of the times we know the reason, we know their social status, we know their past history, we know their medical condition, and you don't often you know, on the psych bit that you have tabulated at the top, we have already have got that information, we just don't tabulate it and we just focus on the presenting thing that day, you know, "I cant sleep doc" but you already know, either they are married, and they have got four kids, and in the past, they have had ischaemic heart disease and hypothyroidism.

There were comments concerning the different approach to psychiatry in general practice in comparison to hospital medicine and the steep learning curve that was required to negotiate the change in diagnostic and management style that was more appropriate to the environment of general practice.

> Yeah. I actually distinctly remember the first few mental illness patients that I saw as a registrar and then in my first year as a general practitioner, and how difficult I found them, and I think didn't see many as a registrar.

4.2.2.11 Implications of the diagnostic label

While general practitioners tend to feel comfortable with attaching a label of depression or anxiety, other mental disorders were not associated with the same level of comfort.

> But again, I have to say I am more comfortable saying "yes this person has got depression", but with those with other more major psychoses you know, I might say, "look, this is looking a bit like bipolar", but I am not comfortable putting that label on someone, cause I think that it is quite a big label to start putting on people.

There appeared to be a delineation between two groups of disorders; those where the general practitioner felt comfortable making a diagnosis (anxiety and depression) and those where the general practitioner referred to a specialist for the diagnostic label. Further, there appeared to be two reasons behind referring patients for a diagnosis; lack of specialised diagnostic information and awareness of the effect of such a diagnosis on the patient.

The respondents were also aware that there were social implications of attaching a label to someone for a particular set of symptoms and that the social implications can be very negative.

> We try not to put labels on some people, because labels tend to stick.

4.2.2.12 Waiting for the diagnosis to emerge

Time available to general practitioners over the space of several consultations was considered a valuable diagnostic aid. Waiting for the development of clarifying features assisted in making a diagnosis when the diagnosis was not immediately obvious at the initial consult.

> … general practice isn't necessarily about getting a diagnosis on the first bat, in general practice sometimes it is about seeing that patient over a time, you know, in and out, and you know sort've

working through, and a diagnosis isn't necessarily the number one, you know, thing to achieve in general practice.

I wonder too if we as general practitioners are more inclined with the lesser mental illnesses, such as anxiety, we are more inclined to be less likely to put a label on the patient and let them go home and maybe we could follow-up rather than commencing treatment and give them that label.

4.2.2.13 Conflicting imperatives

Often, mental illness is not the only reason for consultation. Comorbidities with significant physical illness is a common complicating variable.

You would focus on the heart failure and more the patient with multiple problems, because very often they've not only got all those, as you say, "the physical problems as well", and live in a consultation full of issues around the management rather than issues around diagnosis because the diagnosis often is difficult anyway.

This presents difficulties of what issues will be dealt with at any particular consultation.

… it gave you the opportunity to sort of say well, you know, most of these I can't deal with, but today I could actually do something for this one.

4.2.3   The purpose of diagnosis

4.2.3.1 The imperative of management

The purpose of diagnosis was discussed by many participants. What emerged from the focus groups was a strong emphasis on management rather than diagnosis. It would seem that a diagnosis is simply a method by which the imperatives of management can be attained. This focus on patient management was often repeated and reinforced in multiple contexts.

Yeah, I would say that probably at the top of the list for me is
trying to work out what their social support is and how they are
going to get through this when they leave the office because again
they have only got 15 minutes with us … but I think the top
foremost in my mind is always, what is going to happen when this
person walks out the door, concerned about their own safety as
well to themselves and to others, you know, if they have got kids,
you know. How are the kids going to be as well.

… management is the most important thing because we would
probably be seeing a few, practising like you are, you might be
seeing them every couple of weeks or something, perhaps helping
to guide them through whatever is going on, and almost don't need
a diagnosis other than your own head as to what you know …

… and a diagnosis isn't necessarily the number one, you know,
thing to achieve in general practice.

Attaching a label of mental illness was problematic at times. There appeared to be a
tension between doing what was 'medically' correct in terms of diagnosing according
to previously taught DSM criteria and the intuitive diagnostic method that was shared
between general practitioners but remained implicit. Meeting both patient needs and
self recognised imperatives of management were considered important in the
diagnostic process.

I wonder too if we as general practitioners are more inclined, with
the lesser mental illnesses, such as anxiety, we are more inclined to
be less likely to put a label on the patient and let them go home and
maybe we could follow-up rather than commencing treatment and
give them that label. Maybe we more, as a general practitioner, we
are more into the normal life and we are more likely to belittle the
disease, the illness, whereas the psychiatrists might come out to the
foreground, this is what you have got, anxiety being one of them.

Communication between general practitioners and specialist psychiatry services was acknowledged as an area where a diagnostic label or schematas were useful:

> … but when it comes to things like other areas of mental health that I am not as comfortable with, then I will refer to a list that I have got written out because I need to write a referral letter to the psychiatric people and I know that the referrals going to be easier, accepted and acted upon if I have actually listed down some of those criteria …

4.2.3.2 Medico-legal aspects to diagnosis

Medico-legal issues were also mentioned as a reason for both documentation and the requirement to have a diagnosis:

> … but in case somebody in the future is going to read my notes, yes, I am always thinking of that and that is why I am documenting you know those things, because that is what I have been advised to do just for my own safety as a doctor.

Interestingly, the emphasis on medico--legal reasons for making a diagnosis was surprisingly low, given the increasing attention to issues of complaints over recent years. A high emphasis is placed on accurate and detailed documentation by medical regulatory authorities as a defence against complaint, investigation and litigation. An interesting dichotomy does emerge, however, when the medico-legal imperative is placed alongside the patients wishes. As one general practitioner commented:

> … because for medical legal purposes, I mean, I always do put a label on, always do put a diagnosis on …

It appears that there is a tension between what is medico-legally correct (making and documenting a diagnosis) and what is recognised as being therapeutically more beneficial in some circumstances (not making a diagnosis).

4.2.3.3 Safety issues

Two main themes emerged from discussions on safety; the medico-legal aspects of documentation and the concern over what would happen to the patient or others as a result of the mental illness. Documentation was seen as fulfilling the medico-legal side of a potential patient suicide or unexpected violence.

> … you have only got 15 minutes, and you go straight to the important things that need to be documented for your safety as well, no suicidal ideation, one of the main ones, I always document.

As well as meeting legal obligations of documentation, the issue of patient safety also has a relational component. Safety of the patient was seen as part of good management irrespective of the medico-legal aspects of safety.

> I think the top foremost in my mind is always, what is going to happen when this person walks out the door, concerned about their own safety as well to themselves and to others, you know, if they have got kids, you know.

'Safety' would appear to be entrenched in disease management.

> My first initial, when someone is talking to me, is this person going to kill themselves in the near future, can I manage it, or do they need to see a specialist.

> Well as a general practitioner, what I feel, when I am confronted with a person with a psychiatry disorder or related illness, I think foremost in my mind is whether, and I consider to be quite useful, to sort've make a risk assessment for that patient, where there is immediate danger; their illness poses to either that person or people around him, or if you can allow the person to go back home.

The imperative of safety is integrated into both the diagnostic and management processes. Again, knowledge of the family background was an important consideration when addressing issues of safety and potential management plans.

> [Rural Maori] would be surrounded by Whanau and people who can watch out, so that probably would influence treatment if you are not sure whether to send them in or not into society and go home, if they come in with family and they are all very supportive and 24 hours around that person.

> … if I am worried about somebody's safety and I know they have got a very good safety support at home and everybody, and there are people coming in with them, again you are not as worried because you know they have got people watching over them.

Issues of safety were thought to be important if there were to be any workable diagnostic schemata in the future for general practitioners.

> … you have got to keep asking yourself that question, is this person a real harm to themselves and to others, so a questionnaire must at least make sure that you have covered that possibility.

Issues of safety are intimately bound with patient management. It would appear that many general practitioners are very conscious of the importance of safety in mental health problems and that safety includes possible harm to others apart from the patient. Knowledge of family background and social circumstances is important in quantifying the safety risk.

4.2.4   Culture influencing diagnosis

4.2.4.1 Culturally appropriate ways of presenting with mental illness
The cultural background of a patient was considered to influence the diagnostic process in both expression of symptoms and acceptance of disease. Experience of

respondents included specific cultural groups having negative perceptions of mental illness and therefore resistance to a diagnosis of a mental illness:

> Well there are a lot of cultures where mental illness is not recognised and mental illness is a stigma.

> Well I know Indians, Asians, Chinese a lot. You know, if you have mental illness in the family it's kept hidden, whisper about it, don't talk about it; very different to the western society.

Consequently, people from such cultures may present with a range of symptoms that they feel are acceptable. Such symptoms are physical in nature and the diagnosis of the doctor is supposed to echo this by framing the illness as having a physical cause. This in turn presents a problem for the general practitioner as both diagnosis and treatment may have to be phrased in terms that are acceptable to the patient.

> … we know they're depressed or they're anxious but they won't accept it and so you know, we're giving them medication for something else.

> Q. You call it a different name?
> A. We call it slightly something different or something more acceptable.
> Q. Work tension or- - -
> A. Something like that, yeah.

Giving a diagnosis of mental illness can result in social isolation; it may make some an outcast from their community or indeed the whole family may be isolated. To avoid being socially outcast, some families will hide the mental illness from outsiders.

Culture can also influence how behaviour is interpreted. Intense religious experience can share many features with psychosis, yet such manifestations were not considered by participants to represent mental illness. Indeed, one general practitioner related his experiences of working in Africa where in some cultures, symptoms of psychosis are revered as representing special powers or vision. Culturally unique

expressions and manifestations of disease can make detection of mental illness very difficult for general practitioners.

4.2.4.2 Maori culture

As a distinct cultural group, Maori were considered to have greater prevalence of psychosis than non-Maori. However, even the term psychosis was problematic in Maori as there was experience of 'psychotic' symptoms that were not termed mental illness simply because of the cultural context in which they occurred:

> [Episodes of psychotic symptoms] I have seen it a number of times over years and it is actually interesting, these people are not psychotic clinically, but they have psychotic features that if you put them in a ward and they were telling you this, you would be labelling them as having a serious problem, but they would function normally, otherwise well adjusted.

It was felt that Maori may present late because of greater tolerance of distressing symptoms and sometimes seeking alternative and complementary health care within their cultural framework before presenting to a general practitioner. There may also be editing of information that is available to the general practitioner.

4.2.4.3 Role of Whanau

There was recognition of the role of the family in Maori culture and how this may influence the presentation of mental illness and its management:

> … that for Maori people, a diagnosis of a mental illness would have a much bigger impact on them in terms of Whanau, having so many people around them, and once they have been given a label I can imagine that would have much more of an impact on them, their Whanau, and their standing within the Whanau.

> … there are a number of Maori patients that I see that don't have a whole lot of Whanau around them, you know, so their support systems are completely different from the next Maori patient who I see, who does happen to have a lot of Whanau around them.

However, the wider family dimension is not necessarily beneficial, as there may be difficulties in the family accepting a diagnosis of mental illness.

> … some Whanau will accept things and be really open and want to help the person, and then there are some that for whom that is different, so everybody is still so much the individual even within their culture …

4.2.4.4 Cultural influence on incidence of mental illness
Culture may also influence the general practitioners perception of frequency of presentation of various mental illnesses. Regardless of accuracy of statements, it was generally felt that immigrants and Maori have higher rates of psychosis than other groups and that depression is more common in those of European decent. There was also acknowledgement that interpreting mental illness through a cultural perspective may not be to the patient's advantage.

> … it would be sad if they weren't getting the help because it was like "oh well, it was a cultural belief" so we won't treat it.

4.2.4.5 Cultural differences impacting on outcomes
Finding culturally appropriate secondary care health professionals was considered difficult at times. The unavailability of culturally appropriate mental health professionals was considered to possibly adversely affect outcome of care.

> We have a lot of white European psychiatrists and psychologists, and a female psychologist, rather than male psychologist within the city, so if you are something other than female and European and rich, you may run into problems.

4.2.5   Interacting with secondary care

4.2.5.1 Restricted prescribing
Obtaining access to medication was a commonly cited reason for referral to secondary care.

> … some of the referrals are because the medications are for a
> specialist only [prescribing], so what's the point in trying to start
> them on something other when this way I get them up there [to
> outpatients], and get them started on something more appropriate.

> It is maybe why we are more comfortable with depression, because
> now it has opened up a bit, but 10 years ago you can at least start
> to use some of these other ones whereas before we couldn't, you
> know, then suddenly you had to refer.

An important finding was the narrow range of mental illness that general practitioners felt comfortable managing without secondary care input. Commonly the specialist input requested was assistance with appropriate choice of medication.

> If I have narrowed it down to anxiety I can deal with it, if I have
> narrowed it down to depression I can deal with it. But if the answer
> is schizophrenia I don't touch it, I would refer, because there is so
> many modalities of treatment etc, and with the affective disorders,
> whether you're hypomanic or depressed, there are so many shades
> of that as well.

It would appear that the restrictions on prescribing of psychotropic medications has significantly influenced the confidence with which general practitioners will treat mental illness such as psychosis and schizophrenia. The referral patterns to secondary care may reflect this lack of confidence.

> I think if you have suspicions that the patient is having psychosis,
> it is something I would straightaway refer.

4.2.5.2 Labelling the disorder
The implications of diagnosing someone with a serious and probably long term mental health problem was one reason for referral.

> Yeah, it is a label once you label somebody with bipolar disorder
> or schizophrenia.

Concern over accuracy of diagnosis and perceived need to share, or devolve, the responsibility was the important feature in a referral of this nature.

4.2.5.3 Failure of primary care treatment

An accepted role for general practitioner is the gatekeeper for expensive and resource intensive secondary care. Lack of response to general practitioner treatment or atypical presentations would seem to cause sufficient concern to general practitioners to warrant referral. Again, depression and anxiety were mentioned as being disorders for which general practitioners feel comfortable in management.

> That probably would apply to most general practitioners, I think
> wouldn't it, pretty comfortable, as you say, with depression and
> anxiety. Once we start to get atypical for those things or not be
> responding to treatment that's when we are wanting to refer
> people.

4.2.5.4 Discordance between primary and secondary care

An occasional sense of frustration emerged with the referral system for mental health issues from primary to secondary care. The phenomenon of having a patient referred back without any specialist input was adversely criticised.

> … you have someone who is the coordinator, who is not yeah, I
> am not sure of the person's qualifications, but often sends them
> back and says, "this person does not meet the criteria". We have
> already made the decision for them to please go, and we need help.
> The patient needs help.

There would seem to be discordance between an algorithm based approach used to screen for appropriateness of referral and the very human need for assistance with a mental health issue irrespective of whether the desire for a specialist opinion has originated with the general practitioner, the patient or both.

4.2.6   Requirements of a new schemata

4.2.6.1 Reflecting primary care needs

A general principle emerged regarding the development of future diagnostic classifications and that was the strong imperative for any system to embrace primary care needs and philosophy:

> I think it needs a community origin because in fact a lot of the stuff
>
> we see is actually very different to what psychiatrists see …

The concerns with schemata being driven by secondary care included the very different nature of psychiatric problems presenting to secondary care in terms of severity and frequency, the more fluid nature of illnesses with predominantly behavioural features found in primary care (is the problem distress or mental illness?) and the screening process that occurs in primary care that helps shape the eventual presentation to a psychiatrist.

4.2.6.2 Schemata supporting management

Issues of management were accorded significant value when discussing requirements of a new diagnostic schema.

> Yeah, there is no point in diagnosing something if diagnosing or
>
> not diagnosing it makes no difference to what you do.

> … we are more concerned with management rather than putting
>
> labels on people.

It was thought that any diagnostic schemata, as well as providing information on diagnosis, should provide assistance across several aspects of management; guidance concerning choice of medication, timing of referral to secondary services and prognosis. Timing of referral to secondary services included assistance with potentially suicidal patients and assessment of risk. The role of diagnosis in management was described as assisting in these aspects of clinical care:

… if you take depression for example you want to know which
depressed patients will respond to this, which will respond to that

At the end of the day as a general practitioner you want to know
what we can manage and what needs to go see a specialist …

4.2.6.3 Medico-legal considerations

Several participants discussed the relative unease felt when a diagnosis of depression
had to be added to an insurance form for a patient's income protection insurance.
Such a diagnosis was inevitably going to adversely affect the ability to get insurance,
would probably involve increased premiums and exclusion clauses for mental illness.
It was felt that the reaction of insurance companies was excessive in many cases. A
diagnostic category that acknowledged mood disorder but did not have such
draconian results would reflect what general practitioners felt were more realistic
risks.

4.2.6.4 Ease of use

Simplicity of diagnostic schemata was constantly reinforced by participants, several
mentioning "one page of A4". Simplicity was clarified as having broad categories in a
schema, including only those illnesses commonly seen in general practice and being
stable. The relative instability of diagnoses made using DSM-IV was mentioned as a
comparison where diagnostic categories, and indeed the labels attached to patient
illnesses, seemed to change without reason.

Alongside simplicity was ease of access and being unobtrusive. Producing
written guidelines was not seen as a solution to using a diagnostic system as several
participants mentioned the large number of extensive guidelines on other diseases that
remain untouched and unused in their places of work.

If we could find them amongst all the other guidelines on the shelf.

Being able to access required information on the computer system used for recording
clinical notes or to have a paper based system that could be kept on a desk was
considered very important.

4.2.6.5 Communication

The role of a diagnostic system in communication proved contentious. Communication can be divided between general practitioner to general practitioner, general practitioner to specialist and general practitioner to patient. Although many participants recognised the role of a shared diagnostic system between primary and secondary care as a significant aid to communication, reservations were made concerning the diagnostic detail of such a system. Several participants believed that a useful system for general practitioners would have a very limited range of disorders. However, this would clearly limit intraprofessional communication. The 'label' that a diagnosis provides also acts as a method by which patients can find more information on their illness:

> And I think it is also important for the patient to be aware that this
> diagnosis is part of who they are and they then develop the ability
> to understand, you can now give them some information about this,
> they can have a discussion about it, they go away on the internet,
> they start reading about it and so slowly they can take some
> interest of the issue itself as well …

The need for diagnostic schemata to have high sensitivity and specificity was mentioned several times by participants:

> … and major distinguishing things between them, I mean you
> know sometimes you see different symptoms that have a high
> specificity or predictive value for that particular illness, do you
> know what I am saying, and if one symptom is very specific with
> this particular group, that would be really useful to put in …

Comment was made regarding the difference between protocol and guideline driven management and diagnosis of mental illness. Protocols were thought to be too rigid in nature and not capable of the flexibility required to adequately reflect the needs of general practitioners:

I mean in terms of classification sometimes I think guidelines are better than a classification. With classification I just see something DSM, which just say, if you have these problems you have this classification, whereas a guidelines I see as more the complete picture, which says, how to diagnose, what treatment options are and it follows it through a little bit more, so general guidelines would be of more use.

There was comment about the development of general practitioner skills in using diagnostic criteria if appropriate schemata could be developed:

There needs to be consistency across general practitioner training into general practice and beyond in terms of maintenance of professional skills.

4.2.7   Other findings of note

4.2.7.1 Treatment choices
The environment of general practice comes with restrictions on time available to see patients, difficulties regarding referral to secondary care due to secondary care capacity issues and difficulty in referring to other primary care providers such as counsellors due to financial constraints.

Well time pressures and money pressures probably dictate that the prescription pad is sometimes over-used rather than some of the other options which have been proven to be helpful.

… in general practice you have got 15 minutes, and it is usually part of a list, one thing on their list of things that people come to see you about.

Although the general practitioner may feel strongly about what optimum treatment is for a given patient, resource, management and time constraints may limit available options.

4.2.7.1 Differences between general practitioners and psychiatrists
Differences in time available to undertake an assessment was often mentioned as a
key factor that distinguishes general practitioners from psychiatrists.

> I mean in psychiatry when you are making a diagnosis is that you
> have an hour or two, or three, or a week or two or three to actually
> sit down and sort've prowl around and make a diagnoses.

> Psychiatrists have a whole lot more time; they can have long, long
> discussions. We only have 15 minutes..

There was variable recognition that psychiatrists work under a different framework
than general practitioners and that diagnostic schemata were very commonly used in
psychiatry.

> I imagine that it is a similar process just on a faster … we don't
> have the opportunity to go into as much depth, we don't have the
> same base knowledge to fall back on, but I would have thought the
> actual diagnostic process was fairly similar.

The participants widely agreed that a key part of the work of a psychiatrist is in
making a diagnosis. This is in contrast to general practitioners who are, at times, quite
comfortable without making a diagnosis. This echoes the imperative of management
over-diagnosis as discussed above.

> … maybe we more, as a general practitioner, we are more into the
> normal life and we are more likely to belittle the disease, the
> illness, whereas the psychiatrists might come out to the
> foreground, this is what you have got, anxiety being one of them.

> … they will always give a person a label, you have a schizo
> affective depressive disorder or something, that's what you have
> got. I don't think the hospital system, and specialists in general,
> could cope with something as vague as, you know, mentally,

> slightly disordered or something, if there is something less vague, I
> think they like to have things pinned down a bit more.

There was also clear understanding of the filtering role of those working in primary care to exclude causes of the symptoms that may be due to other factors rather than mental illness.

> When we send somebody to a psychiatrist they will almost
> certainly have some kind of mental illness. There's nothing else.

The team environment of secondary care was considered to be very different to the position of general practitioners. The multidisciplinary team with a variety of different skills and abilities was seen as providing an enhanced level of care beyond what is possible in general practice.

> They also have had input from a multidisciplinary team into that,
> by the time we get a letter with all of that neatly documented
> diagnostic information on it, they have often seen a mental health
> worker, or psychotherapist, or psychologist or somebody else part
> of the team, all who have some expertise in that area, and they will
> have contributed to the actual diagnosis, so …

> I think in hospitals you see the top end of the mental illness, we see
> a lot of a touch of mental illness, mixed in with a bit of this and a
> bit of that, and unemployment and other things that you know …

4.2.7.1 Continuing medical education

There were surprisingly negative comments about traditional continuing medical education.

> I think upskilling would be quite helpful … but not these
> upskilling things, where you know a one hour lecture, where
> everyone sits there and falls asleep.

Well, personally, I don't think that it does very well, and I have been to two CMEs recently, one last year in the hospital, the famous [health management organisation] one, in which I felt I didn't learn anything useful.

And I had questions which were not, there was no time to ask and I asked one and I felt it was treated as though I am a house surgeon and I am a general practitioner, it maybe my over-reaction.

For me, I went along to one of those psychiatry ones and I gained nothing from it.

The recent one they did through [Education provider] on depression I found really interesting but you know you took a small, just the subject of depression, we spent an hour and a half, and we hardly scratched the surface and that is part of the problem, really we just, it is the managing issue.

These comments support the perception that lecture based continuing professional development is of little use when attempting to maintain skills or up-skill in the area of mental health. Conversely, practice based support by psychiatrists was of considerable benefit in assisting general practitioners to improve their ability to manage mental illness.

I have quite a number of times seen psychotic patients who are kind've early on, and by liaising with you know psychiatrists, I have been able to treat them in the community, and sometimes that has worked.

And I find it's getting, if not referring to the psychiatrist, but getting advice from them really helpful in terms of the choice of medications, it is often in tricky cases, often something that takes an awful lot of time, it is just something that general practices aren't overflowing with, with your 15 minute consultation.

It would seem that education based in the real problems of professional life has far more impact on outcomes than traditional continuing medical education formats.

4.2.7.1 Inequalities in outcome and socioeconomic background
Many of the issues that emerged from the focus groups over inequalities in outcome have been discussed in the section above on cultural issues in mental health care. A large number of comments were made about how socioeconomic background of a patient could influence the diagnosis or management of mental illness. The comments were variable in nature. At one extreme were comments such as "It won't change the diagnosis". At the other extreme was awareness that socioeconomic factors have complex effects on management and inequities of service provision.

There was constant reference to differences in care available to those who could afford private psychiatric, psychological or counselling services.

> And things like counselling, could be quite difficult, could be the
> financial cost involved with that and I find that quite frustrating
> because I could see someone could benefit from it, usually there's
> a financial dilemma.

> I don't think it would matter to diagnosis but it certainly plays a
> role in how you manage the problem once you've identified it.
> Somebody who has health insurance or is wealthy can tootle off
> tomorrow and see somebody privately and get all the benefits
> associated with that, whereas others are waiting enormously long
> periods of time to be seen through the public health system and
> that where the inequities arise.

Alongside concerns about differential access to public and private health care for mental illness, there was also the belief that publicly funded services were not as good as those funded privately.

> They get access, I am not quite sure what sort've standard of
> treatment they get because of the mental health service we have

got down there, when there is someone available and then the continuation of care isn't always that good.

Also apparent were cultural issues as a cause of relative poverty and as a cause of suboptimal outcome.

> If you are a rich European with health insurance, or a rich anybody with health insurance, but then there is a lack of appropriate people to refer to if they require an ethnic focus on their problem as well.

Although many respondents indicated that they did not believe that socioeconomic issues affected the diagnostic process, there were observations concerning how poverty may well increase the rate of mental illness and therefore the number of diagnoses being made.

> … and often the people who seem to have a lot of psychiatric problems don't seem to be the ones with high incomes and medical insurance and so private isn't an option and seeing a psychologist is a difficult option as well.

As well as increased incidence of mental illness amongst the socially disadvantaged, there was also the perception that at presentation, the severity of illness may be worse.

> Well probably it is a variety of things, maybe they come later, so that they're almost more florid.

An interesting comment was made regarding how general practitioners may compensate for perceived inequalities in outcome by managing those patients differently.

> Inequalities probably work in a perverse way. I suspect people at the bottom of the pile, might get a label put on them a bit quicker than somebody at the top of the pile.

4.2.8   Summary of qualitative research

There were strong indications that general practitioners rarely use formal diagnostic schemata. Stated reasons are that the schemata seem to lack reliability, they do not reflect the difficulties found in general practice when dealing with issues of mental illness and do not assist with management or decisions regarding pharmacotherapy. It would appear that general practitioners are attuned to picking up distress and limitation in day-to-day functioning as indicators of possible mental health issues. Both distress and disability add a dimensional component to diagnosis but do not feature in diagnostic systems. Pattern recognition would appear to be an important mechanism whereby such distress and reduction in functioning is detected.

Checklists are seldom used by general practitioners. Of those that are, the Beck Depression Score and the Hospital Anxiety and Depression Score would seem the most prevalent. Checklists are used in circumstances of uncertainty about diagnosis, to objectify the degree of suffering and to overcome patient resistance to diagnosis.

Patient beliefs and their potential resistance to a diagnosis of mental illness are contributing factors that influence the diagnostic process. High levels of resistance may result in no formal diagnosis being made. Training and education in mental illness during undergraduate and postgraduate years do not seem to adequately prepare general practitioners for the complexities of diagnosing mental illness.

The major drive behind diagnosis, from a general practitioners point of view, would appear to be patient management. Medico-legal issues are important but seem less so than management. A significant part of management is aspects of safety both of the patient and others. Diagnosis was seen as a common language for communication with secondary care colleagues. A patient's cultural background was seen as influencing the presentation, diagnosis and management of mental illness.

New schemata, if developed, would reflect primary care needs; this would include assistance with management decisions including pharmacotherapy and referral to secondary care, would provide medico-legal support, provide a means of communication with secondary care and yet be simple and integrate with computerised clinical notes. There were mixed opinions regarding the development of shared schemata. One position was that a single schema should be used across both primary and secondary care, the other position was that primary care had very

different needs than secondary care and limiting the schemata to mental illness of direct relevance to primary care was more reasonable.

4.3 DEVELOPMENT OF THE QUALITATIVE RESULTS INTO A SURVEY

A number of themes emerged from the qualitative section of this research. Not all of these were relevant to the central purpose of the research; understanding the utility of diagnostic schemata when making a diagnosis of mental illness in general practice. Some of the results were clearly of greater interest in understanding and exploring the research question in detail and other results, while of general interest, were peripheral to the research question.

In planning the survey, it was clear that the major topic headings would be strongly influenced by the research question. The qualitative phase indicated that there was little uptake of diagnostic systems by general practitioners. However, it was considered important to quantify this aspect of professional behaviour. The information that would be pivotal for the research was the prevalence of use of diagnostic schemata in general practice overall and with demographic data that would allow understanding of change in prevalence according to age or gender.

Understanding why general practitioners did not use diagnostic schemata would inform the research about aspects concerning the utility of current diagnostic systems. The qualitative research had revealed several possible reasons; lack of management guidance resulting from use of schemata, lack of knowledge and experience, concerns over reliability, and being unable to capture some mental health issues that are found in general practice.

4.4 QUANTITATIVE RESULTS

4.4.1 Survey development

The results of the qualitative phase were developed into a survey. The objective of the survey was to quantify the importance of the issues that emerged from the qualitative phase. The questions asked were:

1. Do you use diagnostic classifications such as DSM4 or ICD 10 when making a diagnosis of mental illness?

2. When you do **not** use either of these classification systems, what are your reasons?

3. Please rate how often each of the following factors influences you when you apply a diagnostic label to mental disorder.

4. If there were to be a new diagnostic classification for mental illness, would the following features be useful?

5. Would the following features be important to have in a new classification?

A copy of the survey is attached as Appendix 1.

4.4.2 Survey data

Questionnaires sent: 1,000

Questionnaires available: 974 (26 retired or wrong addresses)

Number returned: 403

Return rate: 41.4%

4.4.3 Demographic data

Analysis of those who responded to the survey in comparison to national data concerning demography of general practice workforce shows:

Table 19. Demographics of respondents by age in comparison to national data				
AGE	National data		Study data	
	n	%	n	%
31-40	261	8.8	36	8.9
41-50	1,337	45.1	176	43.7
51-60	1,061	35.8	146	36.3
61→	305	10.3	45	11.1
(p=0.343)				

Table 20. Demographics of respondents by gender in comparison to national data				
GENDER	**National data**		**Study data**	
	n	%	n	%
Female	1,096	37	165	41
Male	1,868	63	238	59
p=0.101				

Using CHI² to compare observed with expected frequencies, age bands showed no significant difference between study data and national data (p = 0.343). Similarly, national data and study data showed no significant difference in numbers of males to females (p<0.11). For the demographic variables, the age was banded by age <31, 31-40, 41-50, 51-60, 61+. There were no respondents in the <31 age group. Of those who gave data on location of practice, 61 (16%) were rural and 324 (84%) were urban. Rural status was identified by the ability of the practitioner to claim the rural bonus.

Further analysis of data by age, gender, location of practice, years in practice and number of tenths worked was undertaken and is presented in Tables , 20 21 and 22 below.

Table 21. Age, gender and practice location				
AGE	**Male %**	**Female %**	**Rural %**	**Urban %**
31-40	5	15	2	11
41-50	40	53	50	44
51-60	42	28	33	36
>60	13	4	16	8

Comparing the distribution of male general practitioners to female, a CHI² test revealed a significant difference with male general practitioners being more likely to be older (p < 0.000) .

The distribution of rural against urban doctors by age is not statistically different (Chi squared equals 5.167 with 3 degrees of freedom and p = 0.166)

Table 22. Tenths worked by gender and practice location				
TENTHS	Male %	Female %	Rural %	Urban %
<3	6	12	8	8
3-6	10	45	13	27
7-10	84	43	79	65

Male general practitioners work more hours than female ($p<0.001$). The difference between urban and rural general practitioners in number of tenths worked is not significant($p=0.061$).

4.4.4 Analysis

Demographic data were collected to allow for calculation of cross tabulations. The data collected were:

- Grouped age measured in age groups of less than 30, 30-39, 40-49,50-59 and 60 upwards.
- Years since graduation was measured in 5 year intervals.
- Gender
- Indication of rurality of practice
- Country of training

Cross tabulations between questions and demographics were performed.
For all questions, the 5 point scales were grouped into a 3 point scale by summing up the first two scales and the last two scales, the middle (neutral) response was left unchanged.

Analysis undertaken was:

- A cross table with the questions' 5 point scales and the demographic variables.
- A CHI^2 test to determine if the variables are independent or not.
- A cross table with the question grouped scale (3 point scale) and the demographic variable.
- A CHI^2 test to determine if the variables are independent or not.

The results will be presented by each question in the survey.

4.4.4.1 Use of diagnostic schemata
The first survey question was: Do you use diagnostic classifications such as DSM4 or ICD 10 when making a diagnosis of mental illness?

Table 23. Use of diagnostic schema		
	n	%
Never/Rarely	325	82.1
Half the time	35	8.68
Often/Always	36	9.1
Total	396	100
Missing values	7	

Cross tabulations showed no difference with age of respondent, gender or place of graduation. Similarly, number of years in practice showed no significant findings.

4.4.4.2 Why diagnostic schemata are not used
The second survey question focused on why standard diagnostic schemata were not used. The question posed was: "When you do **not** use either of these classification systems, what are your reasons?"

Table 24. Reasons for not using schemata			
	Strongly agree/agree %	Neutral %	Strongly disagree/disagree %
Limited experience and knowledge of schemata	75	13	12
Too complex	66	22	12
Too rigid	57	33	10
Other reasons	56	34	10
Don't reflect mental illness seen in general practice	51	30	19
Not management focused	49	39	12
Poor reliability of coding between practitioners	44	42	13

Cross tabulations were calculated for each reason separately against demographic data. Blank rows have been excluded from data presentation.CHI² calculations showed:

Grouped age.

1. Too rigid. General practitioners 50 or less years of age find schema "Too rigid".

Table 25. Age band and "Too rigid"				
**	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
Age band in years	%	n	%	n
<=50	60	128	40	85
>51	52	99	48	91
p=0.012, n=403				

2. Not management focused. General practitioners 50 or less than 50 years of age find schema "Not management focused"

Table 26. Age band and "Not management focused"				
**	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
Age band in years	%	n	%	n
<=50	52	111	48	103
>51	44	84	56	105
p=0.02, n=403				

3. Poor reliability of coding. As general practitioners get older, the percentage who agree with "Poor reliability of coding between practitioners" increases.

Table 27. Age band and "Poor reliability of coding"

*	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
Age band in years	%	n	%	n
31-40	22	8	88	28
41-50	45	101	55	76
51-60	44	65	56	83
>60	68	29	32	13
p=0.018, n=403				

Grouped years since graduation

1. Too rigid. Those with more than 25 years of experience are more likely to find the schema too rigid.

Table 28. Years since graduation and "Too rigid"

**	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
Years since graduation	%	n	%	n
<=25	62	29	38	14
>25	50	178	50	178
p=0.021 n=399, missing values =4				

2. Not management focused. Those with 25 years experience or more are more likely to believe schema not management focused as a reason for not using them.

Table 29. Years since graduation and " Not management focused "

**	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
Years since graduation	%	n	%	n
<=25	54	24	46	18
>25	41	147	59	210
p=0.024, n=399, missing values =4				

3. Too complex. General practitioners with 25 years experience or greater are more likely to find schema too complex.

Table 30. Years since graduation and "Too complex"

*	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
Years since graduation	%	n	%	n
<=25	68	29	46	14
>25	62	221	59	135
p=0.049 n=399, missing values =4				

4. Poor reliability. As general practitioners work longer they agree more with "Poor reliability of coding between practitioners"

Table 31. Years since graduation and " Poor reliability"

*	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
Years since Graduation	%	n	%	n
6 – 10	57	5	43	3
11– 15	68	24	32	11
16 – 20	76	59	34	18
21 - 25	77	86	33	26
> 25	76	127	34	40
p=0.10, n=399, missing values =4				

3. Gender

Not management focused. Female general practitioners are more likely to report that schema are not management focused as a reason for not using them.

Table 32. Gender and "Not management focused"				
	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
Gender	%	n	%	n
Male	41	89	59	127
Female	60	90	40	60
p=0.005, n=366, missing values = 37				

4. Rural bonus

Not management focused. General practitioners who receive the rural bonus are more likely than others to find schema not management focused.

Table 33. Rural bonus and "Not management focused"				
**	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
Rural bonus	%	n	%	n
Yes	59	40	41	28
No	46	150	54	175
p=0.03, n =393, missing values =10				

5. Country of training

Cross tabulations showed no significant associations.

4.4.4.3 Purpose of diagnosis

Question three related to the perceived purpose of making a diagnosis. The question was: "Please rate how often each of the following factors influences you when you apply a diagnostic label to mental disorder." Results show:

Table 34. Factors influencing a diagnosis of mental illness

	Always/Very often %	Sometimes %	Rarely/Never %
Assist in choice of pharmacological treatment	70	18	12
Communication with other health workers	67	24	10
Assist in decision regarding referral	55	29	16
Providing the patient with a label for their symptoms	52	36	12
Assessing the safety of the patient or others	48	33	20
Medico-legal documentation	36	33	31
Other factors	24	47	29

Cross tabulation calculations show:

1. Grouped age

Cross tabulations showed no significant associations.

2. Grouped years since graduation

1. Communication with other health workers. general practitioners with less experience are more influenced by this factor compared to more experienced ones

Table 35. Grouped years and "Communication with other health workers"

**	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
	%	n	%	n
<=25	68	30	32	13
>25	64	227	36	129

2. Assist in choice of pharmacological treatment. As general practitioners gain more experience, they are less likely to state that assisting in choice of pharmacological treatment is an important factor in making a diagnosis.

Table 36. Grouped years and "Assist in choice of pharmacological treatment"				
**	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
	%	n	%	n
<=25	70	159	32	67
>25	64	117	36	50
p=0.04, n =393, missing values =10				

3. Gender

Cross tabulations showed no significant associations.

4. Rural bonus

Cross tabulations showed no significant associations.

5. Country of training

Cross tabulations showed no significant associations.

4.4.4.4 Requirements of a new classification

Question four concerned the requirements of future classification systems. The question asked was: "If there were to be a new diagnostic classification for mental illness, would the following features be useful?" Results show:

Table 37. Requirements of a new classification			
	Strongly agree/agree %	Neutral %	Strongly disagree/disagree %
Assist with management decisions on pharmacological therapy	94.4	5.1	0.5
Assist in accuracy of diagnosis	92.4	7.1	0.50
Provides information that assists in distinguishing between various diseases	91.9	7.3	0.8
Assist with decision on referral to secondary services	85.1	11.9	3.0
Gives information concerning prognosis	78.3	18.9	2.8

Crosstabulations

Only the variable "Grouped age" showed a significant association. where more of those 50 years of age or younger agree that a new classification system should "Assist in accuracy of diagnosis" compared to those >50 years old.

Table 38. Age band and "Assist in accuracy of diagnosis"				
	Strongly agree/agree		Neutral/ Strongly disagree/disagree	
Age band in years	%	n	%	n
<=50	96	205	4	9
>51	89	168	11	21
p=0.002, n =403				

No significant differences were found in any other variables.

4.4.4.5 Implementation of classification system
The final survey question related to aspects of implementation that were topical in the qualitative phase. The question asked was: "Would the following features be important to have in a new classification?" Results are shown in Table 29.

Table 39. Important factors for a new classification system.			
	Strongly agree/agree %	Neutral %	Strongly disagree/disagree %
Same system across primary and secondary care	93	6	1
Integrated with computerised notes	89	10	1
Limit coding options to only common illness seen in general practice	50	27	23

Cross tabulations showed no significant findings.

4.4.5   Open comment section of survey
A space was left for participants to comment on any aspects of the survey topic. A total of 151 comments were made, some of which encompassed more than one theme. A breakdown of comments by topic was undertaken and five major topic themes identified.

Table 40. Analysis of open comments					
THEME	READ codes	Making diagnosis	DSM and ICD	Future coding systems	Difficulties with diagnosis
NUMBER OF COMMENTS	22	22	45	46	16

4.4.5.1 READ codes

It would seem that READ codes are used by many general practitioners. The only stated reason for using such diagnostic codes was their inclusion and integration with existing computerised record systems. READ codes were adversely criticised by the majority of respondents:

- "The only coding system we use are READ codes, and they are very poor in respect of coding mental illness – in fact are virtually useless in this regard."
- "Currently we have READ codes which are out of date and useless for most mental illnesses I see."
- "I code with READ because it is integrated in my PMS. It wouldn't use any coding system not integrated with PMS."
- "Don't even think of a patient's DSM-IV code when making a diagnosis. Use READ codes all the time."

4.4.5.2 Making a diagnosis

The comments supported the findings of the focus groups. Intuition or gut feeling was mentioned as a common occurrence in the diagnostic process. The label of a diagnosis was seen as both negative "Stigma and effect on the ability to get insurance etc always makes me hesitant" and positive. The wider psychosocial issues affecting the management were also mentioned. The depth and breadth mentioned in the comments regarding psychosocial issues was of note: "A sizable proportion of general practitioner mental health problems do better with evaluation of more than just the presenting problem. e.g. reactive depression + moderate anxiety + alcohol + diabetes + death in family etc."

4.4.5.3 DSM and ICD

There was mention of how inadequate the DSM-IV criteria were in certifying for termination of pregnancy. The usefulness of DSM classifications on discharge summaries was questioned and indeed the overall usefulness of these schemata was also questioned: "I don't feel any of these classifications are greatly helpful in general practice." Again, the lack of both availability and training for both of these diagnostic schemata was mentioned by several respondents:

- "I've never had a copy of DMS Classification …."
- "Have never made time or considered it important enough to study or use DSM classifications as a general practitioner. There is SO much else to do!"

- "They weren't used when I was at med school, and no-one has offered to educate me since."
- "Don't have easy access to coding criteria."
- "DSM4 may be useful but I've never learnt it."
- "I have never seen/used DSM4 or ICD10."

4.4.5.5 Future coding systems

The tension between coding in secondary and primary care was raised: "Identical coding between primary and secondary care is unlikely to be achieved as they have different purposes". Many comments were made about the requirement for any future classification system to be simple, practical, reflect the work of general practice and be integrated with computerised notes:

- "Keep the complexity to a minimum."
- "It would have to be computerised."
- "I support this project because general practitioners do need a workable, credible, "manual" especially when we have such limited access to secondary and tertiary care."
- "Must comply with/be linked in computerised records to either current READ codes or coming SNOMED-CT."
- "Improve on "Read Coding" of present classification."

4.4.5.6 Difficulties in diagnosis

Comments concerning difficulties with diagnosing mental illness focused on time limitations in general practice for managing what is considered a complex issue:

- "In a 15mins consult, how much can one do?"
- "Insufficient time to take a detailed psych history in General practice in order to come to a classification."

4.4.5.7 General comments

Strong support for the research was expressed by many respondents.

- "This is something that I have been pondering about for years! Thank you for looking into it!"
- "I support this project because general practitioners do need a workable, credible, "manual"."

- "Great study. I see a LOT of medico-legal reports from psychiatrists and see the problems that you clearly hypothesise between the general practitioner reality and DSM-IV."

4.6 SURVEY PERFORMANCE

It should be noted that not all respondents provided information on all aspects of the survey. Of particular interest was the low number of respondents who replied to 'Other factors' in the second and third sections of the survey (141 for 'Reason7' and 120 for 'Diagn7'). The average was 382 replies without including these two options. Consequently, these two options were removed from analysis. Section 5 of the survey focused on mechanical issues with instituting a system of diagnosis, contained only three items and was therefore not analysed.

4.6.1 Internal consistency

As described in section 3.6.1, the reliability of a survey is important to establish before considering the generalisability of the survey and the internal consistency as measured by Cronbach's alpha is an acceptable measure of reliability. The internal consistency of the survey in total and by section was calculated using Cronbach's alpha and is given in Table 32. Subjects with missing data were excluded from the analysis. The implications of the findings will be discussed in Chapter 5 below.

Table 41. Internal consistency of the survey	
Survey part	**Cronbach's alpha**
Entire survey	0.72
Reasons for not using schemata	0.76
Factors influencing diagnosis	0.78
Features of new system	0.82

4.6.2 Unidimensionality

Factor analysis, as described in section 3.6.2, is a method of describing variability of related data. The related data in this study are questions in a single section of the survey. It would be expected that all questions in one section of the survey would represent one concept (a factor). Factor analysis is a method of calculating how many

concepts (or factors) are in the related data. The expectation is that each section would have one factor. Alternatively, there should be plausible explanation as to why there is more than one factor for each section of the survey. Factor analysis using principal component extraction method was undertaken on Sections 2, 3 and 4 of the survey.

4.6.2.1 Reasons for not using schemata

Compo nent	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Table 42. Factor analysis on reasons for not using diagnostic schemata						
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.915	48.583	48.583	2.915	48.583	48.583
2	1.201	20.009	68.592	1.201	20.009	68.592
3	.667	11.112	79.704			
4	.536	8.935	88.640			
5	.382	6.371	95.011			
6	.299	4.989	100.000			

A scree plot was generated that revealed two factors with an Eigenvalue greater than one.

Scree Plot
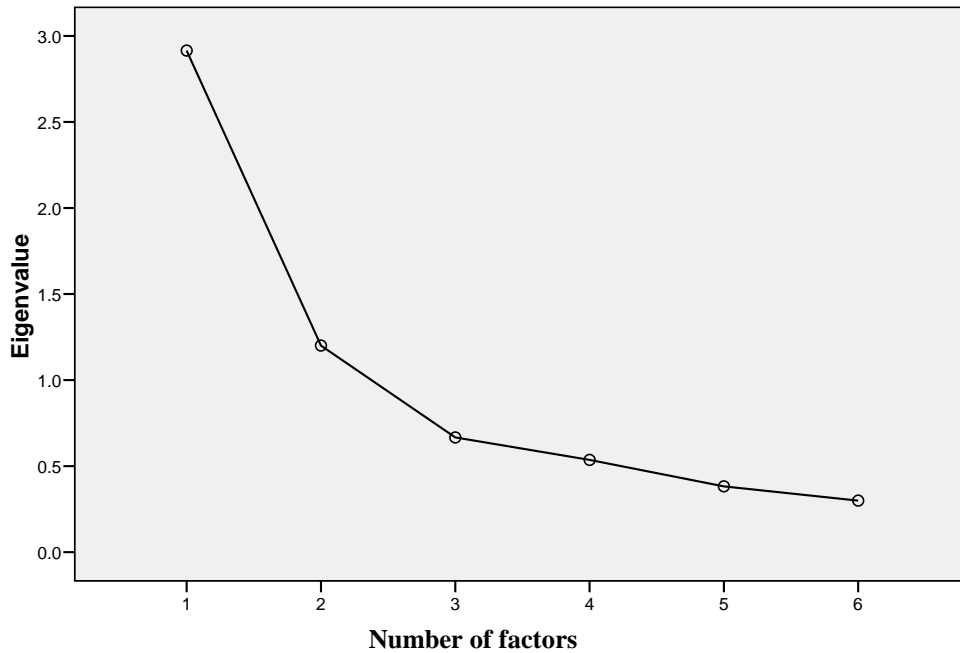
Figure 8. Scree plot on reasons for not using schemata

The component matrix revealed that in Component 1, Reasons 1-5 clumped between 0.673 and 0.809. Reason 6 (Limited experience and knowledge of schemata) separated out with a score of 0.276. Similarly, in Component 2, Reason 6 scored at 0.869 whereas the next highest score was 0.461 and the remainder of the scores were negative. The details of the component matrix are presented in Table 43.

Table 43. Component matrix on reasons for not using schemata		
	Component	
Reason	1	2
Don't reflect mental illness seen in general practice	.751	-.324
Too rigid	.809	-.356
Not management focused	.803	-.036
Too complex	.723	.461
Poor reliability of coding between practitioners	.673	-.020
Limited experience and knowledge of schemata	.276	.869

4.6.2.2 Factors influencing diagnosis

For those factors considered to be important in diagnosis, a factor analysis was undertaken and the results presented in Table 44.

Table 44. Factor analysis on aspects considered to be important when diagnosing mental illness

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.003	50.043	50.043	3.003	50.043	50.043
2	.986	16.434	66.477			
3	.746	12.441	78.917			
4	.549	9.147	88.065			
5	.396	6.604	94.669			
6	.320	5.331	100.000			

A scree plot was calculated and is shown below.
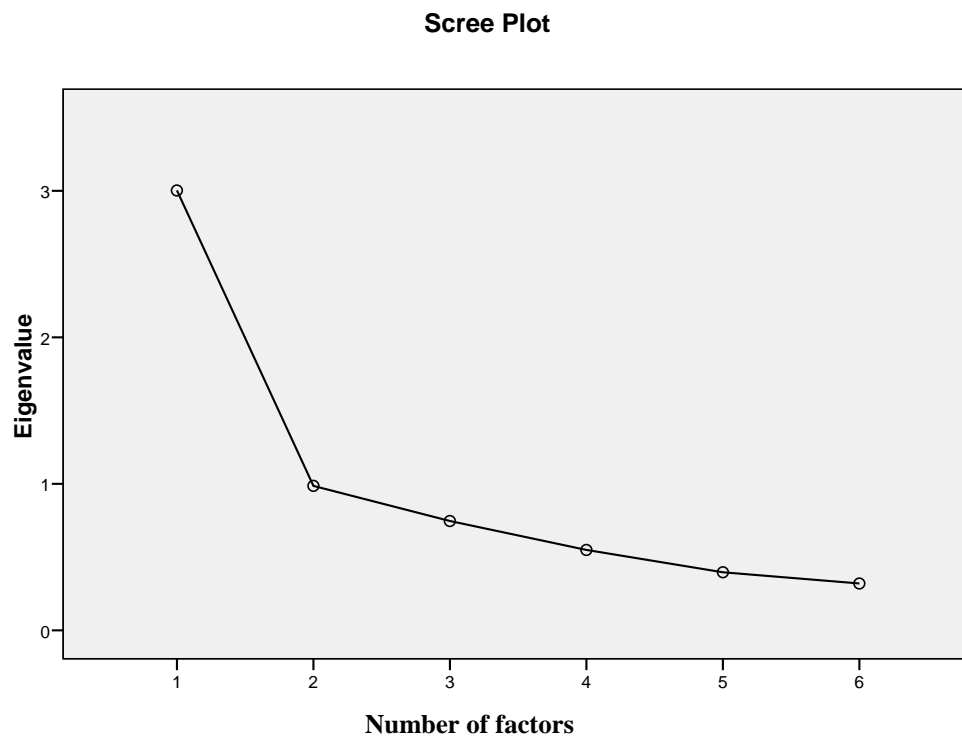
Scree Plot

Figure 9. Scree plot on aspects important in diagnosing mental illness

The component matrix for each question was also calculated and is shown in Table 45 below.

Table 45. Component matrix for factors influencing diagnosis	
	Component
Component matrix for factors influencing diagnosis	1
Medico-legal documentation	.429
Communication with other health workers	.668
Assist in decision regarding referral	.816
Assist in choice of pharmacological treatment	.802
Providing the patient with a label for their symptoms	.693
Assessing the safety of the patient or others	.763

4.6.2.3 New classification

For useful features of a new classification system, a factor analysis was undertaken and is shown in Table 46.

Total Variance Explained

Table 46. Factor analysis on new features						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.964	59.277	59.277	2.964	59.277	59.277
2	.806	16.113	75.390			
3	.481	9.616	85.006			
4	.398	7.961	92.967			
5	.352	7.033	100.000			

The scree plot confirms the single factor with only one point with an Eigenvalue of greater than 1.
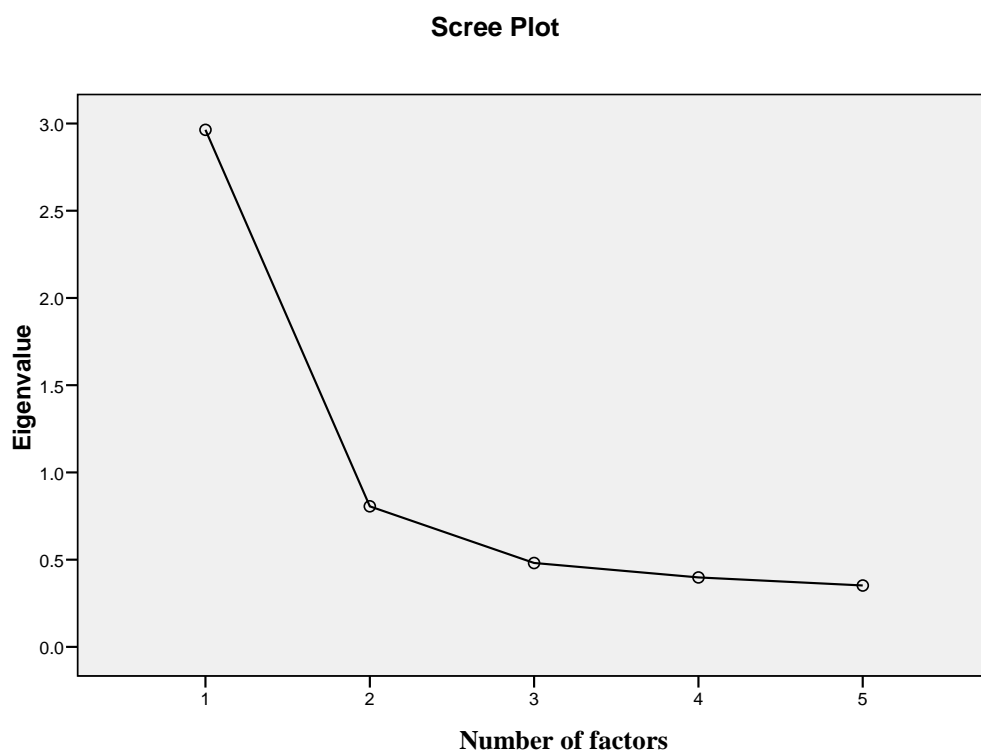
Scree Plot

Figure 10. Scree plot on new features

Similarly, the component matrix reveals good uniformity of components.

Table 47. Component matrix on new features	
	Component
Component matrix on new features	1
Gives information about prognosis	.710
Assist with the decision on referral to secondary services	.721
Provides information that assists in distinguishing between diseases	.772
Assist with management decisions on pharmacological therapy	.828
Assist in accuracy of diagnosis	.812

4.6.2.4. Interpretation of factor analysis results

Two factors emerged from the analysis of reasons for not using diagnostic schemata. This implies that there are two separate structures within the data that are unrelated to each other. A factor with a single variable "Limited experience and knowledge of schemata" reflects one of these structures while all other variables were located in the second factor. It would appear that limited experience and knowledge of diagnostic schemata is a variable unrelated to all other variables tested in understanding why general practitioners do not use diagnostic schemata. Relating this to the research question, if the respondents have little knowledge or experience with diagnostic schemata, it is difficult to make judgements about other attributes of such schema. Similarly, all other variables excepting "Limited experience and knowledge of schemata" are inter-related and reflect a central the me about why general practitioners do not use diagnostic schema. This central theme could be described as difficulties perceived by general practitioners to using diagnostic schemata. Poor knowledge and experience of schemata represents a different reason for not using them. Analysis of the other sections of the survey revealed a single factor for each section. All variables within each section are therefore related.

4.7   SUMMARY

The vast majority of general practitioners do not use formal diagnostic schemata such as the ICD-10 or DSM-IV. The processes used by general practitioners for diagnosing mental illness are tacit, variable and complex. Clinical intuition or 'diagnosis on minimal cues' can describe some instances of diagnostic process. Clinical experience with reflection on this experience was considered important in developing this skill of clinical intuition. Historical knowledge of individual patients assists in the process by providing information on premorbid level of functioning. Checklists such as Beck depression score and Edinburgh score are occasionally used.

Inherent in the process of attaching a label to what is happening to a patient is consideration of the meaning of that diagnosis to the patient. If the label is unacceptable or would impede management, it is possible that such a diagnosis will not be given. Imperatives of management take precedence over diagnosis and the priority for general practitioners is patient management. The cultural background of a patient is particularly relevant regarding management.

The most pertinent reasons for not using diagnostic schemata are the lack of availability and familiarity with standard schemata. Perceived excessive complexity and rigidity were also commonly cited reasons as well as lack of management focus.

Diagnosis, from a general practitioner perspective, would seem to meet a range of quite disparate functions. Providing a common language for communication between health providers was considered important as was providing a label for patients. Diagnosis can aid in some aspects of management and plays a role in choice of treatment and decisions concerning referral. As with any diagnostic process, high degrees of sensitivity and specificity are important.

For future diagnostic systems, providing decision support for choice of pharmacological management and referral is clearly important. Enabling communication across the health system by using a common coding system between primary and secondary care is a desirable feature from a general practice perspective. A key success factor for implementation of a diagnostic system would be integration with current practice management software. Simplicity of the coding system and provision of decision support within it are also highly desirable.

Throughout the focus groups, it became clear that many of the participants had a sense of disquiet concerning the process by which a diagnosis of mental illness is made by general practitioners. The disquiet centered on the differences between this process and the processes that were both taught at medical school and are currently used by specialists in the subject (DSM-IV and/or ICD-10).

The survey was assessed for both internal consistency and unidimensionality. The internal consistency (measured by Cronbach's alpha) of the entire survey was 0.72 with the individual sections scoring between 0.76 and 0.82. A factor analysis using principal component extraction found that one section (reasons for not using classification systems) reduced to two factors; all other sections reduced to one.

CHAPTER 5 – DISCUSSION

5.1 INTRODUCTION

This chapter will discuss the results of the research and establish that findings of this research regarding prevalence of use of diagnostic systems is in accord with the very limited data available from other studies. Prevalence of uptake of standard diagnostic systems (ICD-10 and DSM-IV) will be discussed and reasons for poor uptake will be considered. The concept of current diagnostic systems having evolved from the needs of specialty psychiatry and imported into general practice. Differences in practice between specialty psychiatry and general practice will be explored from the perspective of diagnostic schemata. The purpose of diagnosis will be explored from a general practice perspective and consideration of key success factors for use of diagnostic schemata presented.

Potential solutions to the current position of low rates of diagnosis of mental illness in general practice have been suggested and these will be discussed with particular relevance to the research findings. Solutions will be discussed to two separate issues; the theoretical stance of diagnostic schemata appropriate to general practice and the logistical issues with implementing a diagnostic system. The generalisability of this research will be discussed. A framework for critiquing qualitative research will be used to evaluate the research and similarly, a separate framework will be used to critically appraise the survey. Opportunities for further research that have been identified as a result of this project will be considered.

5.2 USE OF DIAGNOSTIC SCHEMATA IN GENERAL PRACTICE

5.2.1 Minimal use

This research indicates that New Zealand general practitioners seldom use diagnostic schemata when making a diagnosis of mental illness with 82% reporting either never or rarely using them. Previously published New Zealand research indicated a significantly larger number (40%) of general practitioners using DSM-IV55(43). However, the sample was small, comprising only 43 general practitioners in a single locality whereas this research comprised 403 replies from a random sample of general practitioners throughout the country. Apart from this small Auckland study, there is an oblique statement in a paper on views of general practitioners regarding diagnosis, treatment and collaborative care in depressive illnesses that suggested general

practitioners rarely use diagnostic systems (46). A small qualitative UK study also suggested the same (48).

The development of primary care versions of both ICD-10 (ICD-10 – PHC) and DSM-IV (DSM-IVPC) were heralded as acceptable and valid methods of diagnosing mental health problems in general practice. This research would suggest that there is a considerable gap between the intent of developing these systems and the reality of practice. Indeed, there is little evidence that use of schemata improves outcomes for patients or performance of general practitioners (325). As discussed in Chapter 2, the published literature conveys a sense of frustration over the failure of intervention to improve diagnosis, management and treatment of mental illness in general practice. Exhortations are commonly made for general practitioners to embrace schemata based diagnostic systems that are prevalent in specialty psychiatry. Mellsop found that 74% of psychiatrists felt general practitioners should use the same classification system as psychiatrists while only 26 % felt a simplified version would be appropriate (326). However, the literature is deficient in understanding why general practice seems so recalcitrant in the face of what would appear to be reasoned argument for change.

5.2.2   Causes of minimal use

This study revealed that the reasons for minimal use of schemata are that general practitioners believe they have little knowledge or experience with such schemata (75%), as well as a perception that the schemata are too complex (66%) and rigid (57%). Lesser reasons are that current schemata are not management focused, may not reflect the nature of mental illness seen in general practice and concerns over the reliability of schemata as a diagnostic tool. Concerns over reliability of coding mental illness became more prominent with increasing age of general practitioner and increasing years since graduation. There is no published research apart from this study that has specifically sought general practitioners opinions on the diagnostic systems and therefore it is not possible to triangulate these findings.

5.2.2.1 Limited knowledge and experience of schemata

This research also provides some understanding as to why general practitioners feel they have little experience or knowledge of diagnostic schemata. The reasons can be divided between issues of management and those of education. The open comment section revealed that gaining access to the schemata was problematic. Copies of the

schemata were considered expensive and difficult to obtain. It may well be that some of those who indicated they have 'limited experience and knowledge of schemata' would also indicate that the schemata have a range of other negative attributes because of a need to justify their stance. The reality may be that with poor knowledge and experience of schemata, it is difficult to estimate how inappropriately complex or inappropriately rigid the schemata are for use in a general practice setting.

5.2.2.2 Educational barriers to the use of diagnostic schemata

Education into the use of schemata was also a barrier to their uptake. There was inadequate or non-existent training for some general practitioners in the use of schemata and lack of continuing education into their use for others. In New Zealand, the curriculum for vocational training in general practice does not formally teach diagnostic schemata. Many doctors who enter vocational training in general practice will have had little experience of working with such schemata since leaving medical school. Their learning opportunities with using such schemata have taken place entirely in secondary care and the role they have had in these learning opportunities has been as a student, not as a qualified doctor with clinical responsibility.

5.2.2.3 Age of practitioner as factor

Curiously, younger general practitioners were more likely to believe that the schemata are too rigid and not management focused. There are a number of possible explanations for this finding; familiarity with schemata, different training or statistical anomaly. They may be more aware of the schemata because of more recent experience of them and are in a better position to judge the appropriateness of using secondary care tools in a primary care context. General practice training has undergone significant changes over recent years with changing emphasis over its identity. Rather than each component of general practice being a subset of the relevant specialty (e.g. general practice geriatrics being a simplified version of specialty geriatrics, general practice cardiology being a simplified version of specialty cardiology etc) there is growing awareness and understanding that general practice as a discipline has unique features that are not shared by specialty medicine. The differences found between younger and older general practitioners may therefore reflect a rejection of secondary care devised tools because of differences in training.

5.2.2.4 Limited nature of mental illness managed by general practitioners.
The results of the focus groups clearly indicate that general practitioners perceive that they actively manage a very narrow range of mental illness. Anxiety and depression with variations of these two conditions were seen as the principal focus of mental health work in general practice. Of considerable interest is the range of mental illnesses that general practitioners spontaneously discussed in focus groups. The overwhelming majority of discussion topics were variations on anxiety and depression and the difficulties inherent in managing these conditions. The literature reviewed would strongly support this belief; the review suggests that of mental illness presenting to general practitioners, approximately two-thirds will be depressive illnesses and approximately one-third will be anxiety related illnesses. It is accepted that this is an approximation but does give some indication of the prevalence of disorders presenting to general practitioners. Psychotic illnesses are seldom diagnosed by general practitioners and almost always specialist psychiatrists are involved in both diagnosis and ongoing management. Similarly, eating disorders are much less common than anxiety and depression and commonly have specialist input to diagnosis and management. The role of the general practitioner in these conditions is therefore limited and does not require detailed diagnostic lists.

5.2.3   Low utility of schemata in general practice setting

If utility is defined as providing useful information about prognosis, treatment options and furthering understanding about the disease, then it is clear that the current diagnostic systems have very low utility in general practice. Indeed, it could be said that regardless of how good a diagnostic system is in assisting with management of mental disorder, if it is not used, it cannot be useful. However, aside from the argument concerning prevalence of use, the issue of usefulness needs further discussion.

5.2.3.1 Failure of schemata to detect distress and disability
A body of research has previously been discussed that identified the burden of distress and disability in general practice. The research also highlighted that general practitioners are perceptive at identifying this distress and disability, as detailed in section 2.15.2.1. The presence of distress and disability does not, per se, indicate that mental illness is present. The same symptoms can be caused by mental illness,

subthreshold disorder or adverse life events. Conversely, mental disorder can exist with minimal disability and distress and general practitioners are poor at identifying mental disorder under these circumstances.

The transitory nature of symptoms in diagnoses such as adjustment disorder and the poor sensitivity of DSM-IV in identifying significant psychological distress in primary care have been previously discussed. The survey in this research revealed that 51% of general practitioners felt the standard diagnostic schemata did not reflect mental illness seen in general practice and 57% felt that the schemata were too rigid. It is likely that the belief that diagnostic schema are too rigid and do not reflect mental illness seen in general practice are reflecting the failure of diagnostic schemata to identify distress and disability or to distinguish between those with mental disorder and those who are distressed but who don't have mental disorder. The concern with rigidity of diagnostic schema was one conclusion of a previous qualitative study on general practitioners and diagnosis of depression (57). This brief 1996 report used in-depth interviews for data gathering on 21 general practitioners. Thematic analysis was the analytical tool of choice. The results section state: "The general practitioners felt that the official diagnostic criteria are 'too rigid' to be of use in diagnosing primary care depression". Unfortunately, no further analysis of understanding what is meant by the term 'too rigid' was given. The report further stated: "Thus, due to the prevalence of distress and subthreshold disorders, the transient nature of psychological states, and the superiority of dimensional approaches in primary care patients, concerns exist about the validity of the DSM system to characterize mental illness in primary care settings"

The finding of this research identified similar issues. In this research, the degree of discomfort with the rigidity of standard diagnostic schemata, particularly the application of criteria to what may be the end result of complex social problems, is of note. In an aptly titled paper "An epidemic of depression or the medicalisation of distress", Mulder explores the construct of depression (327). He contends that the DSM model of depression is neither useful nor valid and states "The apparent increase in major depression results from; confusing those who are ill with those who share their symptoms; the surveying of symptoms out of context; the benefits that accrue from such a diagnosis to drug companies, researchers and clinicians; and changing social constructions around sadness and distress"(p238). Comments made by participants in the focus groups regarding the difficult distinction between life

sadness and depression validate Mulder's argument from a general practice perspective.

5.2.3.2 Failure of schemata to provide management guidance
Just over half of the respondents in this survey considered that a reason for not using diagnostic schemata was that they do not provide management guidance. Irrespective of the respondent's knowledge of how the diagnostic systems work, the knowledge that they represent simply a diagnostic process and do not give management advice is well known. Casey, Dowrick and Wilkinson stated "The distinction between disorders requiring treatment and those that resolve spontaneously over time is more than a nosological nicety because it impinges upon clinical practice and policy via resource allocation" (221). Further, they divide mental disorder in primary care into three categories; distress requiring no specific intervention, distress requiring intervention and major psychiatric disorder. They also comment that neither DSM nor ICD systems recognise these important distinctions despite the obvious resource implications of self limiting mental health symptoms where intervention is ineffective.

In this survey, just over 70% of general practitioners considered assistance with pharmaceutical management of mental illness is the most important purpose of the diagnostic process. Other disease management imperatives were assisting in decisions regarding referral (55%) and assessing safety (48%). Clearly, general practitioners consider diagnosis to be a part of a process that includes management rather than an isolated procedure that is divorced from treatment. This is no different in approach to the guidance that specialty psychiatry will get from using a diagnostic system. However, management is not specifically built into either DSM or ICD. When asked for what elements should a new classificatory system have, 94% of general practitioners in this survey strongly agreed with the assertion that the system should provide assistance with pharmaceutical management.

5.2.3.3 Linking treatment with diagnosis
As discussed in the literature review, two papers have suggested a link between performance in diagnosing depression with ability to meaningfully treat the condition (56, 57). This would suggest that identification of depression is not only dependent on ability to diagnose, but is also dependent on ability to manage depression. The findings of this research support the notion that general practitioners, when

diagnosing depression, do consider management of the condition in the diagnostic process. If there is little likelihood of being able to influence the course of the disorder, a diagnosis may not be made. Perceptions of resource limitations to accessing treatment for mental disorders were found to be common and were particularly relevant for those from low socio-economic backgrounds. This issue of limited access was explored by Nutting et al in a study on why guideline concordant care was not initiated by general practitioners and practice nurses(159). Their findings were that a range of barriers exist that are related to patients psychosocial circumstances as well as patient beliefs and attitudes. The authors particularly noted the difficulties experienced in accessing appropriate care from general practice and commented:

> One simply cannot hold the primary care system accountable for its ability to provide population-based care for depression while withholding the resources required to pay the cost of care management and more extensive interventions needed to reach patients that care management did not reach.

Very similar issues were found in this research where significant barriers to accessing services were revealed by general practitioners that were mainly focused around the patients social and financial status. The public health system was viewed by the general practitioners as sometimes being unable to meet the needs of those who did not have the financial ability to access care through the private system.

5.2.3.4 Management barriers: Integration of schemata into practice management systems

This research also revealed that a key success factor for use of any diagnostic schemata in general practice is the ability to integrate the schemata into the practice management system, a feature not available for ICD or DSM systems. Only 2% of the surveyed general practitioners either disagreed or strongly disagreed that a diagnostic system should be integrated with computerised notes with 10% of general practitioners being neutral. New Zealand general practices are highly computerised. Data from 2004 revealed 99% of New Zealand general practices using some degree of computerisation and 72% using computerised notes (70). It would be expected that

the number of practices using computerised notes would have increased since then. With such widespread use of electronic medical records, an opportunity would seem to exist for a diagnostic system utilising the platform of the electronic clinical record.

5.3   DIAGNOSIS CODING

The data from the open comments section of the survey indicated considerable use of READ codes. Alongside the significant uptake was a strongly expressed belief that this coding system was of little value. The study discussed above by Didham et al found erratic data collection regarding diagnosis; 65% of practices coded for diagnosis but of these 65%, a quarter admitted to intermittent coding (61). READ codes were by far the most popular method of coding (94%). ICD codes were used by 2% and ICPC by 1%. The popularity of READ codes as a method of recording diagnosis is surprising given the substantial misgivings that the respondents in this study voiced about their utility. However, READ codes are integrated with practice management systems, are immediately available during the consult, do not require referral to paper based information and come at no additional cost to the practice. The high rate of coding would seem to reflect openness to the principles of disease coding for mental health issues.

5.4   CONTRASTING SPECIALTY PSYCHIATRY WITH GENERAL PRACTICE

The origins of the diagnostic systems in specialty psychiatric communities of practice have previously been discussed. This section will consider the uptake of diagnostic systems by psychiatrists in comparison to general practitioners and discuss work issues that may account for differences found.

5.4.1   Comparative uptake of schemata

This research focused on general practitioners attitudes to diagnostic schemata such as DSM-IV and ICD-10. A recent New Zealand study of psychiatrists views on the utility of such schemata provides an interesting comparison(326). A 43% return rate from 542 invites was achieved. The results indicate routine use of DSM-IV in their work. The schemata was used by 89% of respondents for making a diagnosis (Axis I). Of further interest is the substantial decline in use of additional axes, particularly those axes that measure psychosocial factors and level of functioning.

Table 48. Use of DSM axes by psychiatrists

	Routinely	Sometimes	Never
Axis I (diagnosis)	89%	8%	3%
Axis II (underlying personality)	70%	26%	4%
Axis III (co morbid conditions)	65%	29%	6%
Axis IV (psychosocial factors)	52%	37%	11%
Axis V (assessment of functioning)	33%	49%	19%

Comparing the results of this research and the above paper concerning psychiatrists and general practitioners use of diagnostic schemata, and roughly equating the terms 'routine' with 'often/always', use of diagnostic schemata shows:

Table 49. Use of DSM by general practitioners and psychiatrists

General practitioners: Often/always	9 %
Psychiatrists: routine use	89 %

Although not specifically sought in the quantitative section of this research, the qualitative section revealed a strong interest by general practitioners in both psychosocial issues and level of functioning with less emphasis on the diagnostic label. The reverse would seem to be true for psychiatrists. This focus on the higher axes was also found in American community psychiatrists; 92% use axis 1, 75% use axis 2 and 3 with only 50% using axes 4 and 5 (53). The study, however, achieved a poor 25.3% return rate from 600 invited participants.

5.4.2 Differences in work between general practitioners and specialist psychiatrists

Previous research by Klinkman et al highlighted the significant differences in past history, severity, and impairment between primary care and specialist practice (162). The authors further describe three underlying reasons as to why treatment of mental illness in general practice is conceptually different than in specialist psychiatric services: differences in presentation, differences in process and differences in the

epidemiology of mood disorders. These arguments are worth exploring further with reference to this research.

1. Undifferentiated and unrehearsed nature of presentation. The undifferentiated and unrehearsed presentation of mental illness that occurs in general practice was noted by the participants in this research. During a consultation, general practitioners provide a language by which those who attend can understand what is happening to them. Both this language and the understanding are brought by the patient to the psychiatrist. In contrast to the mixture of social difficulties with physical and mental problems that present to a general practitioner, the psychiatrist deals with a problem that has become well circumscribed. The process of the problem becoming well circumscribed commonly involves consultations with general practitioners.

2. *Patient acceptance of mental illness.* There may also be conflict between patient and health practitioner beliefs concerning what is 'wrong' and such conflict will influence the process of diagnosis. A general practitioner may feel that mental illness is present, whereas a patient may believe differently. In specialist psychiatry, almost always the barrier of accepting the diagnosis of mental illness has been overcome and it is rarer to find conflict over the existence of a mental health issue. This point may be challenged by psychiatrists who use techniques such as cognitive behavioural therapy for those without mental illness. The authors also distinguish between recognition and identification of problems in general practice, a distinction that is not relevant in specialist psychiatry. A general practitioner may be aware of a problem such as mood disturbance, but may choose to prioritise other health issues that need more urgent attention. This represents a difference in the process of dealing with diagnosable medical problems.

3. Unclassifiable presentations. The presence of distressing symptomatology that is unclassifiable by existing schemata is the final point of difference between diagnosing mental illness in general practice and specialty psychiatry. The difficulty of fitting symptoms to diagnostic criteria was often raised by the participant general practitioners in the focus groups in this research. The

response to such difficulties was to treat empirically while being aware that management decisions may not reflect 'best practice' as judged by the application of diagnostic schemata, an approach clearly central to specialist psychiatry. The difficulties in applying a bimodal diagnostic process (e.g. can a diagnosis of depression be made or not?) to a continuously distributed variable (mood) has been previously recognised by Jacob as one factor responsible for the poor uptake of mental health guidelines in general practice (237).

5.4.3   Importing tools from a foreign culture

The work of a psychiatrist and the work of a general practitioner when diagnosing and managing mental health problems are fundamentally different. This difference manifests itself in the respective use of diagnostic schemata derived from specialty psychiatry. In searching for an explanation as to why such a rift has opened between general practice and specialty psychiatry, Jacob commented, "The culture of primary care psychiatry borrows heavily from academic psychiatry and attempts to adapt it to the reality of primary care. The compromise is uneasy, unstable and difficult to apply in general practice" (237). Jacob's referral to the culture of primary care psychiatry is worth examining further.

The concept of a community of practice has been previously discussed. Implicit in a community of practice is the use of semiotic mediation and semantic artefacts that are unique to a particular community. Semiotic mediation is the lens through which sense is made of the world and without which "people would be buffeted about by the stimuli that they happened to encounter as they went about in the world" (328 p 116). Semiotic mediation is the set of rules by which a psychiatrist will approach a psychiatric problem, or a general practitioner will approach an undifferentiated problem. Semantic artefacts are objects or concepts that have particular meaning within a community of practice.

Diagnostic systems, in particular the DSM-IV, have particular meaning within the world of psychiatry because they represent the underpinning theoretical construct of the discipline (positivistic and categorical) as well as an object of self identity (the physical manual). The meaning of semantic artefacts is not necessarily transferable between communities of practice. As previously discussed, solutions to the problem

of poor detection rates of mental illness in general practice (a unique community of practice) commonly include the use of diagnostic systems (semiotic mediation) contained in the DSM-IV (semantic artefact) that have arisen from specialty psychiatry (a different and also unique community of practice).

It would seem that a series of false assumptions have been made; that medicine represents a single community of practice; that semantic artefacts have shared meaning across all medical disciplines; that semiotic mediation by which mental illness is diagnosed is a single process shared between psychiatrists and general practitioners. These false assumptions would seem to provide a theoretical basis anchored in sociocultural theory for failure of secondary care derived diagnostic systems to improve performance in detecting mental illness in general practice. The obvious question, given the failure of imported systems to improve general practice performance, is why no system has been developed within the community of practice of general practice to improve performance.

5.4.4 The centrality of diagnosis in specialist psychiatric services

The focus groups revealed that general practitioners hold a range of views on the work of psychiatrists. Whereas general practitioners were content working without a diagnosis, they also believed that a central role of a psychiatrist was to make a diagnosis and that specialty services such as psychiatry would be uncomfortable to manage a medical condition without a diagnosis. General practice is commonly referred to as a discipline in which health professionals work in an environment of 'high uncertainty and low technology' whereas specialty medicine is characterised by 'high technology and low uncertainty'. General practitioners views on both themselves and on their specialist psychiatric colleagues would fit comfortably with this position.

5.5 INTERMEDIATE DOSE ANTIDEPRESSANTS

Historically, there has been dispute regarding the use of intermediate dose antidepressants for the treatment of depression. As recently as the year 2000 research articles chided general practitioners for using what were termed sub-therapeutic doses of tricyclic antidepressants (235). More recent meta analysis has corrected this belief with the conclusion that intermediate dose antidepressants can have a significant therapeutic effect (218). In the focus groups there was a general belief that research

suggested low or intermediate dose tricyclic antidepressants are not efficacious for treating depression and yet the focus groups revealed that they are still used on occasion in low or intermediate dose for this condition. Further, there was the belief that the use of these medications in such doses is against notions of best practice and would earn the disapproval of their specialist colleagues. Several explanations are possible. General practitioners may believe that data regarding effectiveness of low dose antidepressants in the treatment of depressive symptomatology has been derived from specialty practice and the validity of such data does not transfer well into primary care. This reinforces that general practitioners hold to the concept of the populations of primary care and secondary care as being significantly different. The contrary argument is that good data exists on the efficacy of intermediate dose tricyclic antidepressants and that the myth of ineffectiveness persists in the face of evidence.

There may also be a belief that research data informs but should not dictate treatment for individual patients. This would be in line with definitions of evidence based medicine: "Evidence-based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients" (329). The focus on care of the individual overriding imperatives of population based evidence allows latitude to manage in a way that is not aligned with the evidence. It is also possible that continued use of intermediate dose tricyclic antidepressants represents more a symbolic act demonstrating concern rather than a belief that a depressive episode caused by neurotransmitter imbalance is being chemically and biologically normalised by medication.

A further consideration is the awareness of subthreshold depression by general practitioners on an informal basis. Comments made in the focus groups indicate that general practitioners do take a dimensional approach to the construct of depression. The research literature concerning subthreshold depression provides a confusing picture over definitions and therapeutic options. What may be happening under these circumstances is that general practitioners are intuitively treating subthreshold depression with a medication dose for which there is only evidence of ineffectiveness for treating major depression. There are no clinical trials that prove or disprove effectiveness of low dose tricyclic antidepressants in subthreshold depression.

5.6 CONTINUING PROFESSIONAL DEVELOPMENT

Data from the focus groups revealed disillusionment in traditional continuing professional development (an expert lecturing a group of general practitioners late in the evening) but also a belief that education based on real world problems provided by specialists on a need to know basis is effective in delivering better patient outcomes. As previously discussed, overseas data would support the contention that general practitioners are overconfident in self estimation of ability to diagnose and manage mental health problems. It may be that lack of appropriate and effective continuing professional development is partly responsible for such overconfidence. The majority of those with mental illness who are undiagnosed by a general practitioner may never have the opportunity to have their mental illness diagnosed by a different health practitioner. Under such circumstances, there is very limited feedback to general practitioners regarding the sensitivity and specificity of their diagnostic ability. Thus, general practitioners are left in a position where it is almost impossible to calibrate their diagnostic skills on an ongoing basis. The calibration that could potentially be achieved by appropriate and effective continuing professional development does not occur because of ineffective format and delivery mechanisms.

There is robust research data that strongly supports the very limited impact of formal didactic teaching sessions removed from clinical work or patient outcomes (330). There is, however, good data to support the educational effectiveness of interactive sessions between educators and doctors, a position that is reflected, for example, by telephone consultations between general practitioner and psychiatrist (331). These telephone consultations were considered very useful by participant general practitioners in this research. Effectiveness of individualised educational initiatives further supports such methods of learning (332) as well as data on teaching integrated into clinical practice (333).

5.7 THE PURPOSE OF DIAGNOSIS IN GENERAL PRACTICE

5.7.1 Competing pressures on diagnostic process

The results of this research indicate that general practitioners feel that the diagnostic process is an important part of the therapeutic process and has potentially several valuable functions. This finding accords well with previous research on English general practitioners, where 98% felt that diagnosis was important in managing and treating mental health problems (334).

There appear to be several competing pressures on the diagnostic process. Participants in the focus groups revealed a patient centered approach to clinical care. Such an approach would hold that in circumstances where a diagnosis is detrimental to care or would not be accepted, a diagnosis may not be made. The corollary is that attaching a name to a presenting problem can be therapeutic in its own right. However, the general practitioner may still hold a belief that a diagnosable mental health problem exists. The same presenting symptoms may have very different outcomes in terms of diagnosis. Those who receive a diagnosis of mental illness have different imperatives in seeking help than those providing health care.

Of further interest is the environment in which general practitioners work. The majority of general practice income is government derived. Governments and large health care organisations take an understandably population focused perspective on health care. In population focused health care, that which cannot be counted has no value. As pointed out by Dew et al, "It is the specialists framework that has traction for policymakers and funders" (50). The 'Competing Demands' model as described by Klinkman has already been discussed (154). This research confirms that the model is highly relevant to general practice where many social issues coexist with psychological or psychiatric issues. Indeed, the world of general practice.

5.7.2 Communication

General practitioners were well aware that diagnostic schemata were widely used in secondary care and knew that DSM schemata were the method of choice in many secondary care institutions. The majority of those surveyed (67%) believed that one purpose of diagnosis is communication with other health workers and 93% considered that the same classification system should be used across primary and secondary care. Mellsop's work on New Zealand psychiatrists found that 74% of psychiatrists felt the same system should be used across primary and secondary care (326). It would seem that there is a shared desire of both general practitioner and specialist psychiatrists for effective inter-professional communication and that shared language concerning diagnosis is a key element of this communication. Accurate communication with secondary care providers provides yet another reason for making a diagnosis as there are a range and severity of mental illnesses that general practitioners are uncomfortable to treat without early secondary care involvement. As well as

providing a means of communication with secondary care, a diagnosis may assist in recognising those presentations that will need early secondary care involvement.

5.7.3 Assisting with choice of pharmacological management

As discussed above, there was strong support amongst respondents for the notion that one purpose of diagnosis should be to inform pharmacological management (70% replying 'always/often' and 18% replying 'sometimes'). Half of the surveyed practitioners stated that a lack of management focus was a reason for not using schemata, the majority of those surveyed felt that one role of diagnosis was to inform pharmacological therapy and to assist in decisions regarding the boundary between primary and secondary care (55%). It would seem that for GENERAL PRACTITIONERs there is a strong desire for the diagnostic process to inform management. This raises the question of the use of clinical decision support for general practitioners.

5.7.4 Medico-legal

A medico-legal tension also exists with the requirement of justifiable diagnosis and documentation of such a diagnosis. A surprising finding was the relatively low priority (36% replying 'always/very often' and 33% replying 'sometimes') placed on medico-legal documentation as a reason for making a diagnosis. A common theme in literature from indemnity insurance companies concerns the requirement for detailed documentation of consultations. A publication produced by the Medical Council of New Zealand also suggests that a diagnosis is an important part of the medical record (335 p 93). In general, documentation of a consultation without a diagnosis or differential diagnosis would not be considered complete. There are a number of possibilities as to why the medico-legal imperative to diagnosis should receive such low priority; other supportive documentation such as a detailed history may be considered as medico-legally protective as a described diagnosis; there may be lack of faith in the diagnosis; there may be no perceived benefit in making a diagnosis if the priority of the interaction is management.

5.8   THE VALIDITY OF SCHEMATA

The discussion above has drawn attention to the importance of distress and disability in general practice consultations. Conversely, psychiatrists seem to focus on the diagnosable psychiatric disorder with much less emphasis on level of functioning and psychosocial factors. This raises the issue of differences in construct of mental illness and raises questions concerning what is supposed to be measured as defined separately by specialty psychiatry and general practice.

It is acknowledged that psychometrics, logic and other social sciences have definitions of validity that are subtly different from each other. A psychometric definition of validity is of most value when looking at diagnostic processes as diagnosis is the application of a test to a set of circumstances. The definition of validity of a diagnostic system from a psychometric stance is fidelity between what is measured and what is supposed to be measured. The question of what is supposed to be measured is of considerable relevance to this research.

5.8.1   Validity as a psychiatric construct

The term validity has been previously discussed with reference to its use in psychiatry. Validity in psychiatric diagnosis is the ability to divide syndromes according to natural boundaries that separate them from other disorders by zones of rarity (54). This categorical approach has been fundamental to the development of diagnostic systems (336). In turn, the ability to develop accurate diagnostic methods has enabled psychiatry to justify its presence at the table of traditional scientific medicine characterised by a positivistic world view (23). Thus the validity of diagnostic systems as used in psychiatry is defined by psychiatry's theoretical basis.

5.8.2   Theoretical construct of general practice

General practice has not developed such theoretical arguments concerning its identity to the same extent. Therefore, describing validity of diagnosing mental illness in general practice is problematical. As commented in an article extolling the virtues of a post-modern educational programme "The infamous comment of the 1960s that general practice is the repository of those who 'have fallen off the ladder' with no particular claims to either special knowledge or an academic specialty in its own right is alive and well in medical schools up and down the country" (337). Of the very few

articles written on theorising in general practice, Thomas concluded that general practitioners instinctively use evidence generated from three methods; constructivism, critical theory and positivism (338). The clinical issue will dictate to an extent which theory or combination of theories will be used.

5.8.3 Constructivism in general practice

Constructivist theory is of use when a number of alternatives become apparent and a mutually acceptable outcome is desired. This research demonstrated a number of constructs that support the notion of both constructivist and positivist world views being used instinctively by general practitioners. Attaching a label of mental illness was not a simple positivistic process of matching symptoms with schemata; rather it was a negotiated process that considered patient resistance to diagnosis and patient culture. Distress and disability were both considered important clues to the existence of mental illness and also in adding a dimension to it; a wholly positivistic stance would categorise without dimension. These findings would support the notion that general practitioners do instinctively work in a constructivist framework. A critical theory approach was demonstrated by use of intermediate dose of tricyclic antidepressants. This was acknowledged to be against the evidence based opinion of psychiatrists, yet was employed as a therapeutic manoeuvre.

5.8.4 Positivism in general practice

A positivistic approach was revealed in the results of the survey where there was strong support for diagnostic systems being able to advise on pharmacotherapy and referral criteria. The desire for a consistent approach in education to any new diagnostic schemata and the desire for reliability (assisting in distinguishing between various diseases) in diagnostic systems also point to the use of positivistic frameworks by general practitioners. Positivistic theory is useful when faced with evidence based decisions, such as which medication is most appropriate for a particular condition.

5.8.5 Critical realism in general practice

Critical realism, as described in section 3.4.3, is a method of revealing the context of a phenomenon. Although sharing the concept of examining historical and social context with constructivism, critical realism does not position all reality into discursive practice.

A critical realism approach was demonstrated by use of intermediate dose of tricyclic antidepressants. This was acknowledged by participants in this research as be against the evidence based opinion of psychiatrists, yet was employed as a therapeutic manoeuvre.

5.8.6 Validity from the consumer's perspective

The other major stakeholders in validity of diagnostic schemata are, of course, those with mental illness and those who care for them. The concept of validity of a diagnostic system from a consumers perspective is not easily defined as validity may have varying meaning to different groups. The literature does explore different concepts of relevance to diagnostic systems from the consumers perspective. As described by Laird, Smith, Dutu and Mellsop, the process of diagnosis can give meaning to what was happening, add to knowledge as to how to cope with mental illness, provide opportunity to seek further information and is a method of accessing services (339). The diagnostic process was also considered symbolic of a shift from a difficult and poorly clarified problem to active management of a defined problem. Their research did, however, reveal significant neutral and negative connotations to the diagnostic label that included stigma of having mental illness, difficulty with finding work, disagreement with the label and cultural insensitivity of the diagnostic process. How the diagnosis was communicated by health professionals was a crucial factor in the impact of the diagnostic process for family and those with mental illness.

There is data to suggest that consumers take a strongly constructionist view. In discussing the results of a study by Moeke-Maxwell et al on consumers perspectives on diagnostic classification systems, the authors noted: "The conclusion is that these systems are 'tools' and the power and influence of them on peoples' lives is more about the person using it than the tool itself" (143). The complexity of a diagnosis of depression was nicely revealed by a qualitative study on patients diagnosed by screening for depression (340). The result was far from a simple acceptance of diagnosis and desire for treatment; nine out of 17 did not accept the diagnosis and commonly believed their problems were the result of psychosocial difficulties they were experiencing. The resistance to diagnosis was based also on stigmatisation that diagnosis may bring, concern over the usefulness of labelling and scepticism over the necessity of treatment and effectiveness of treatment.

This 'misfit' between medical concepts of depression and patients experiences has been previously recognised and discussed. Having significant comorbidities of physical, social and psychological problems accompanying depression has already been discussed (161). These comorbidities are common and are significant causes of distress and disability beyond the coexisting depression. It is thus understandable that those diagnosed with depression interpret their symptoms as combinations of difficult life events. it is likely that validity of diagnosis and diagnostic systems are coloured by being simply one method by which their misery may be helped. Other methods of problem solving may be seen as just as effective and come without stigmatisation or acceptance of solutions over which there is lack of confidence.

It would appear that the use of diagnostic schemata in devising a diagnosis is relatively unimportant in comparison to other factors that are part of the process of diagnosis. Communication skills and the purpose of diagnosis colour the information that is received by consumers and their families. Resistance to diagnosis, perceptions of stigma and concern over medicalisation of reactions to life events may well be ameliorated by good communication skills. The purpose of diagnosis may be perceived by consumers of mental health services as being, at one extreme, the application of diagnostic criteria against symptoms or, at the other extreme, a significant step to understanding the disease, accessing services, accessing information and assisting in therapeutics.

This research highlighted that general practitioners are aware of distress and disability in those who attend for consultation, are aware of the complex social issues that frequently accompany mental illness and are aware of resistance to diagnosis. Management of a patient with mental illness in general practice, as revealed in this research, acknowledged these variables and incorporated them into management plans.

5.8.7 Multidimensional validity

As previously stated, there is little research into theoretical underpinnings of general practice. Similarly, there is a paucity of research into consumers' needs of psychiatric services, be they from general practice or specialist psychiatrists. Validity of diagnostic systems is not necessarily a unidimensional concept; the positivistic stance of traditional psychiatric thought would seem to be inappropriate for constructs of validity from a general practitioner perspective and also, perhaps, from a consumer

view. If there has been little development of theoretical understanding of general practice as a discipline, it is not surprising that semantic artefacts have not been developed concerning recognition and diagnosis of mental illness within the discipline. This research would support the notion that both positivistic and constructionist perspectives are both necessary in any diagnostic systems that would be of value in general practice and that critical theory provides a manageable compromise between two quite disparate but also complementary paradigms. Indeed, the tacit understandings that exist amongst the community of practice that is general practitioners concerning diagnosis of psychiatric illness align well with the concepts of critical realism. This raises the interesting question of antecedent and precedent; should theory drive practice or should the requirements of practice drive theory. It is suggested that in the absence of accepted and developed theoretical constructs, it is acceptable and desirable that observed practice should inform discussions of theory. Indeed, for such a pragmatic discipline as general practice, it may be unacceptable to the profession for any other option than for practice to drive theory.

5.9 A MODEL OF CONFLICT BETWEEN GENERAL PRACTICE AND SPECIALTY PSYCHIATRY

The work of Pinkus et al on critiquing the conceptualisations of subthreshold disorders has already been discussed(214). The authors described a model of understanding the divergences that result from the very different approaches taken by general practitioners and specialty psychiatrists as portrayed in the literature over low detection rates of mental illness by general practitioners. Populating this diagram with the concepts of the research paper regarding the outcome of differences between these two groups allows broader interpretation of the concept. This model has been previously introduced but for clarity of discussion it will be replicated in Figure 20 below.
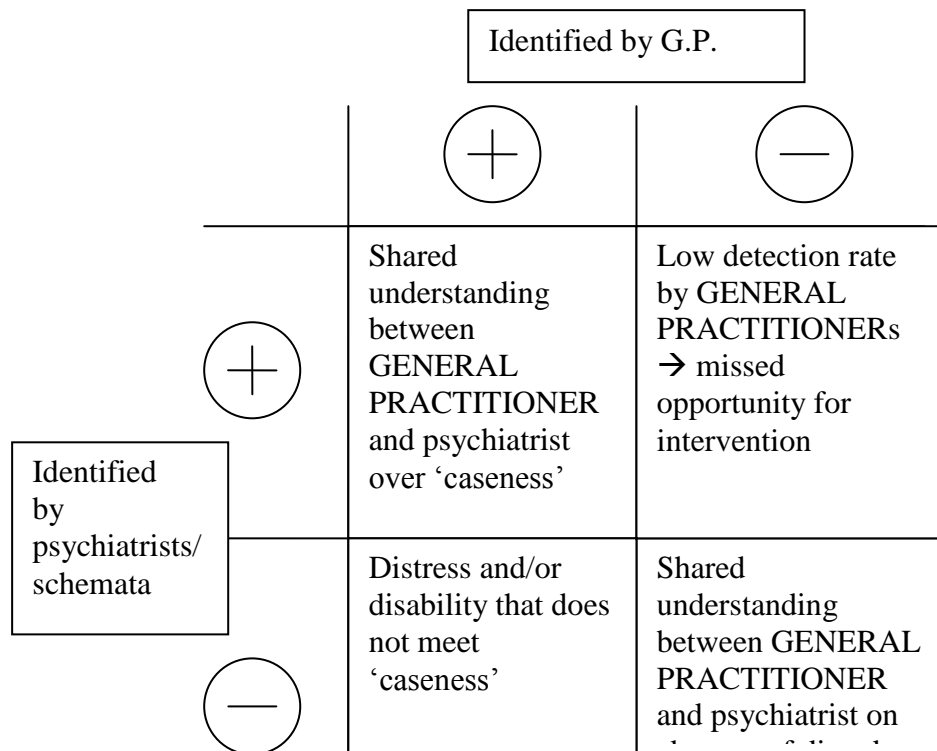
Figure 11. Comparing psychiatrists and general practitioners when diagnosing mental illness.

5.9.1 Those who are [psychiatrist - and general practitioner +]

Developing the model by Pincus et al, several separate groups are identifiable within the larger cluster of those whom the general practitioner believes there is mental illness but such illness does not reach 'caseness'.

1. Subsyndromal depression and anxiety are part of this cluster. It is accepted that within the umbrella of subsyndromal disorder, several other discrete entities are variably defined; subthreshold disorder and minor depression.

2. Those who don't have subsyndromal conditions may have significant distress and/or disability that is uncategorisable.

3. There will be a group for whom symptoms have been mistaken by the general practitioner as being caused by physical illness but who have significant mental illness. These represent 'true' false positives.

4. There will also be a group for which the general practitioner has detected true mental illness but psychiatry services have failed to recognise 'caseness'. It is likely that such circumstances are rare.

The limited evidence that exists concerning efficacy of treatment of subsyndromal/subthreshold disorders is unconvincing. There is no evidence that supports or refutes any treatment regime in those who are general practitioner + and psychiatrist – but not classifiable as having subsyndromal disorder. It is likely that the majority of those who general practitioners treat with low dose tricyclic antidepressants are psychiatrist – and general practitioner +. Under such circumstances, when there is a paucity of evidence regarding effective therapy, the choice to treat with low dose antidepressants is not without merit.

5.9.2   Those who are [psychiatrist + and general practitioner -]

This group of patients represent those where concern has frequently been expressed at the low detection rate by general practitioners. Again, rather than representing a homogenous group, several distinct subgroups exist.

1. As this research has suggested, there are those for whom a diagnosis of mental illness is culturally unacceptable or unacceptable for other reasons even if the general practitioner feels that a diagnosable mental illness exists. It is unlikely that a diagnosis will be made under such circumstances.

2. Another group within this quadrant are those for whom the general practitioner chooses not to pursue the possibility of mental illness due to competing demands within the consultation (Klinkman's Competing Demands model previously discussed).

3. There may be complicity between patient and doctor in avoiding a formal diagnosis of mental illness due to the impact of such a diagnosis on other aspects of the patient's life such as availability of income protection insurance.

4. A diagnosis of mental illness may be made by a general practitioner but not formally recorded as such. Not all studies that reported on rates of detection of mental illness recognised that failure to record is not the same as failure to diagnose.

5. This research indicated awareness that treatment for those with mild mental illness (particularly anxiety and depression) may make little difference to outcomes. There are considerable constraints on accessing secondary services such as psychological input, counselling input or psychiatric input. Indeed, for those with mild mental illness and no financial resources, it may be impossible to access any assistance if pharmacological therapy is unhelpful or not

acceptable. This research suggests that general practitioners may not make a diagnosis of mental illness if the result of making such a diagnosis does not influence management.

6. There may be failure to recognise symptoms of mental illness by general practitioners due to factors such as inattention, oversight or lack of knowledge. This group represents the 'true' false negatives.

7. A small group may be those where no mental illness exists, no mental illness is identified by a general practitioner but a diagnosis is made by specialty psychiatric services.

The 'true' false negatives represent only one out of seven possible reasons for general practitioners failure to detect mental illness in those who present to them, yet research into detection rates almost universally fail to distinguish between 'true' false negatives and other reasons behind the low detection rates.

5.9.3 Differences between the discourse of psychiatry and general practice

The language of psychiatry is shared amongst that community of practice. There is commonality of understanding over the concepts and meanings that are associated with words that describe psychiatric conditions. Diagnostic schemata provide a method of maintaining shared understanding. The perceptions of patients do not influence how a diagnosis is made.

General practitioners, on the other hand, do not have such detailed shared understandings of terminology even amongst themselves and therefore have no shared diagnostic criteria. What may be diagnosed and treated as depression by one general practitioner may be considered to be 'life sadness' by another. What is also clear is that patients have considerable influence on the diagnostic process; an 'unacceptable' diagnosis of mental disorder may well not be made by a general practitioner.

The literature review revealed that even when general practitioners were educated in the use of diagnostic schemata and were enthusiastic in its uptake, there was no discernable improvement in either diagnosis rate or outcomes. The use of diagnostic schemata introduced shared meaning over terminology and therefore a supposedly consistent approach to diagnosis that would be matched by other general practitioners and diagnostic criteria. However, only two of the seven reasons for poor detection rates would be addressed by simply applying diagnostic schemata in general

practice. Similarly, the use of diagnostic schemata would recognise only one of the four reasons for general practitioners believing there is mental illness but psychiatrists and schemata reporting absence of mental illness.

5.9.4 Positive predictive values

The positive predictive value (PPV) is the ratio of true positives to false positives. From a patient's perspective, the positive predictive value answers the question: "If I have the disease, what is the chance that the diagnostic test will tell me that I have the disease?" Both the prevalence of the disease in the population and the detection rate of the test are the variables that give the positive predictive value. In this case, the diagnostic test is the general practitioner.

The formula for PPV = $\dfrac{\text{True positive}}{\text{(True positive + false positive)}}$

To measure the positive predictive value of general practitioners making a diagnosis of mental illness, a range of assumptions must be made. The first is that general practitioners will diagnose with mental disorder a small number of those who do not meet DSM caseness. It is suggested for the purpose of this argument that this may be 5%. The literature revealed mental disorder overall to commonly present to general practitioners (somewhere between 20% and 50% of those who present) and the detection rate low (somewhere between 30% and 50%). If the mean of these figures are used (35% of those presenting to general practitioners have mental disorder and 40% of mental disorder is detected by general practitioners), the 2 times 2 table becomes:

		DSM Positive	Negative
GENERAL PRACTITIONER assessment	Positive	14	3
	Negative	21	57

PPV =   82%

Assumptions: 35% prevalence, 40% detection, 5%

false positives

The sensitivity is 40% and the specificity is 95%.

Although the low detection rate would seem, on the surface, to reflect poor performance by general practitioners, this rough estimate of positive predictive value (82%) would indicate that general practitioners display reasonable performance in detecting mental disorder.

This argument is based on the assumption that the detection rate should be calculated by including only the 'true' false positives (those instances that represent a 'mistake' in diagnosis). However, all other reasons for diagnosing mental illness discussed above may be quite reasonable from a patient's perspective as to why a diagnosis of mental illness should be made; the literature review found reasonable evidence that subsyndromal disorders are associated with significant distress and disability. The literature reviewed also indicated that subsyndromal conditions were as common as their counterparts that do meet DSM 'caseness'.

5.9.5   Negative predictive values

The negative predictive value is the ratio of true negatives to false negatives. From a patient's perspective, if the patient does not have a mental illness, what is the likelihood that the test (the general practitioner) will reveal that they do not have a mental illness. The conceptual difficulty is how a mental illness is defined. As previously discussed, distress and disability due to emotional problems are very common in general practice but may not meet 'caseness' of diagnostic schemata. This leads to frustration in general practitioners exemplified by the findings of this research where diagnostic schemata were considered too rigid and not to reflect mental illness seen in general practice. From a patient's perspective, general practitioners are picking up significant symptoms that are distressing.

Similarly to the process undertaken for positive predictive values above, there are many causes as to why general practitioners may diagnose mental disorder when 'caseness' for diagnostic schemata is not met. Of these causes, only a few are 'true' false negatives.

5.10 ANALYSIS OF SURVEY PERFORMANCE

5.10.1 Survey reliability

The concept of reliability in a survey was introduced in section 3.6.1 and a justification given for using Cronbach's alpha as a measure of internal consistency. It was also established that an alpha of 0.07 or more was desirable as an indicator of acceptable internal consistency. . The survey developed for this research had an item count of 20 if the 'Other factors' and management questions were removed. The sections had item counts of six. There are alternative methods of estimating the internal consistency on scales with small item numbers if the alpha is unacceptably low. However, in this case, the alpha was acceptable and other methods were not required.

The alpha coefficient was calculated for this survey and for the individual sections. The overall alpha was 0.72. This would indicate that the survey developed to answer the research question has acceptable internal consistency. The separate sections also scored well in terms of internal consistency with the three main sections all having alpha coefficients of above 0.75.

5.10.2 Survey dimensionality

The rationale for undertaking an analysis of unidimensionality was discussed in section 3.6.2. with principal component analysis as an acceptable method of undertaking such analysis. The results have been provided in section 4.6.2. It would be expected that if the process of constructing a valid survey (the qualitative component of this study) was robust, if the process of developing the results of the qualitative phase into a survey was also robust and if the survey was reliable, each section should demonstrate that all questions in that section were unidimensional (different measures of a singular underlying concept).

Of the three analyses undertaken, one resulted in a two component matrix and the other reduced to a single component. Closer examination of the questions revealed why the section on reasons general practitioners did not use diagnostic systems reduced to two components. The question on limited experience and knowledge was clearly aberrant in the component matrix of the factor analysis and was grouped with no other variable. If an individual respondent has little knowledge of the diagnostic schemata, it is very difficult to accurately opine on other questions such as 'too

complex' or 'too rigid'. Only by reflection n on the factor analysis with the survey questions does this anomaly in survey design become apparent. Overall, the factor analysis undertaken suggests that the survey demonstrates good unidimensionality.

5.11   CRITIQUING THIS RESEACH

5.11.1 Qualitative phase

A number of issues are relevant when critiquing qualitative research. As described by Morse et al, understanding of concepts of quality in qualitative research have developed significantly over many years with increasing emphasis on credibility, transferability, dependability and confirmability(341). These concepts have been described originally by Guba and Lincoln(342).

5.11.1.1 Credibility of results.

Credibility can be defined as how well the results of the research reflect the beliefs and experiences of the participants. In general, rigorous attention to good methods should enhance the credibility of results. An important methodological aspect of the study was placing the focus groups in the work setting of the respondents. This choice was made for several reasons; recruitment of general practitioners would be substantially easier, the general practitioners would feel more relaxed and comfortable in a familiar place and there would be less in the way of difficulties concerning power imbalances between researchers and participants. Selection of subjects was determined by identifying three homogenous groups of practitioners who may have slightly differing opinions on utility; urban general practitioners, rural general practitioners and those working in Maori led clinics. It was felt important to ensure all three were included so that all relevant issues were revealed, accumulated and that saturation of concepts could occur. Other positive factors in the credibility of results are utilising two other general practitioners in designing the coding template and the principal researcher acknowledging potential bias in running focus groups and in subsequent interpretation of results. It is the unacknowledged bias that can confound data interpretation more than the acknowledged.

Limitations to credibility include unintended and unconscious bias in coding despite utilising a method to overcome this. Using only two Maori led clinics in the focus groups may be criticised as insufficient for saturation of concepts. However, only two such clinics in the study region had a sufficient number of general

practitioners to run focus groups. As previously discussed, there is rationale for a single researcher to code data once a coding template has been created from the first 3 transcripts. Indeed using multiple coders of all data was not financially feasible. However, it would have added to the credibility of results for independent sampling of the remaining six transcripts to ensure that coding accuracy was maintained. This would have added methodological robustness to the process without substantially increasing cost.

5.11.1.2 Transferability.

Transferability is the degree to which the results are transferable to other similar groups. For this research, the group to whom the results were transferable were all general practitioners in New Zealand. Positive aspects of transferability of the research findings include the use of 9 separate focus groups with 34 general practitioners in rural, urban and Maori led clinics. The key findings of the qualitative stage of the research were developed into a survey to assess the transferability of these findings to the wider population of general practitioners. A negative aspect was incorporating only mainstream and Maori practices in data collection. It could be argued that general practitioner working with other populations, such as Asian, may hold different views than those researched.

5.11.1.3 Dependability

Dependability refers to the dynamic environment in which the research occurs. Action research takes an iterative approach in that re-measuring the research question sequentially can incorporate changes in the environment. This research was a 'snapshot' of general practitioners use of diagnostic schemata when diagnosing mental illness, even allowing for the 6 months between focus groups and survey responses. The variables that could influence the dependability are if significant change occurs in the environment after the research that would render the research obsolete or during the research process. For this research, there have been no major changes in the role of general practitioners as primary care givers, no major changes in expectations as to how general practitioners diagnose and treat those with mental illness in the community, nor have there been major shifts in available technology that may influence how well

5.11.1.4 Confirmability

Confirmability reflects the degree that the results could be confirmed or corroborated by others. Described methods for enhancing confirmability are for a second researcher to act as 'devil's advocate' during data interpretation and undertaking a data audit to ensure consistency of coding and interpretation and providing a detailed 'thick description' of the research methods. Such a description provides a degree of assurance that other researchers using the same methods would arrive at a similar conclusion. The level of detail included in this report would allow for duplication of the research. Financial constraints prohibited the use of a second researcher to challenge assumptions.

5.11.2 Quantitative phase

Key factors in the construction of a survey include the construction of the survey, appropriate selection of respondents, delivery method, and analysis of results. Each of these stages can be problematic in the construction of a robust survey and will be discussed.

5.11.2.1 Likert scale construction

Three important potentially confounding variables found in Likert scales are acquiescence bias, central tendency bias and social desirability bias (343). Acquiescence bias (desire to please the person conducting the interview or survey) occurs only in non-anonymised surveys and is therefore of little concern here. Social desirability bias is the desire to represent the group to which the respondent belongs in a favourable light. Self administrated surveys tend to reduce this bias. The qualitative section of the research did reveal instances of general practitioners feeling apprehensive because they did not use a formal diagnostic process when diagnosing mental illness. If there were an effect of social desirability bias, it would likely be to exaggerate the number of general practitioners who indicated that they use diagnostic systems either some of the time or all of the time. Since the overall result was that the number of general practitioners who use such systems is very low, this bias would not have unduly affected the results.

Central tendency bias (also termed end-aversion bias) is the unwillingness of respondents to use the extremes of a rating scale. This is more pronounced in Likert scales that have higher numbers of choices. Combining the two positive choices and

the two negative choices compensates for central tendency bias, a technique that was used in the analysis of survey data for this research. The major sources of bias associated with Likert scales are of little significance to this research.

The response options chosen for this research (Strongly agree, agree, neutral,, disagree, strongly disagree) are standard Likert response options. There is good evidence that standard deviation, skewness or kurtosis do not vary between 5 point, 7 point and 10 point Likert scales but 10 point scales produce slightly lower means (344). The survey was field tested on 20 general practice registrars for clarity of instructions.

5.11.2.2. Selection of respondents

The population from which the sample was drawn was defined by those doctors who held Fellowship of the R.N.Z.C.G.P. Three groups of doctors were therefore excluded from the research but who also practice in the wider sense of general practitioners; non-vocationally registered doctors, vocationally registered doctors who hold vocational registration through other channels than the R.N.Z.C.G.P and those who are still attaining Fellowship. It is difficult to estimate numbers of doctors working in these positions, but approximate numbers would be 150 general registrants working in general practice without vocational training, somewhere less than 50 vocationally trained general practitioners without Fellowship of the R.N.Z.C.G.P. and about 700 doctors working towards Fellowship. The cumulated total of these three groups does represent a significant number of doctors (about 900 or almost one-third of the total population that was sampled for this research). However, the research was aimed at exploring the perceptions of experienced general practitioners and therefore those without reasonable experience (those working toward Fellowship) can be safely excluded from the study population. The remaining 200 doctors could represent a sampling bias but as they represent less than 7% of the experienced workforce, this bias is likely to be insignificant. Other concerns over selection bias are answered by the comparison of the study population and the sample population; there were no significant differences in numbers by age stratification or gender.

5.11.2.3 Survey delivery

This research could be criticised for failing to attend to follow-up of those who did not respond. At the beginning of the research process, it was considered of import to

take steps that would assure participants of the anonymous nature of the survey. To this end, the survey was designed as a 'single pass' method. The reasoning behind this choice of method was that respondents would be more assured that the information they submitted would be confidential and anonymous. In retrospect, this was excessive attention to issues of privacy. The comments from respondents were surprisingly open in nature and no concerns about anonymity were voiced. It would have been possible to achieve almost the same degree of anonymity using accepted survey methods such as the Dillman method (345). The Dillman method requires the researchers to follow a set of steps; the survey has an illustrated front cover, set of instructions, unique identifier for each respondent, and covering letter signed by hand in blue ink. A reminder postcard is sent 1 week after the survey is sent and at 3 and 7 weeks a duplicate survey is sent with registered mail used for the 7 week duplicate package. Although some claims for this method seem exceptionally optimistic, a conservative opinion is that more attention to multiple contacts rather than the 'single pass' method may have increased the response rate by up to 16% (346). However, it must be pointed out that age and gender stratification revealed that results from the study population were generalisable to the overall population of general practitioners.

5.11.2.4. Analysis of results

If a sufficient number of statistical tests are undertaken on a data set, by chance alone there will be some results that are reported as being statistically significant but where no such association exists. Deliberately undertaking a high number of tests on a data set to find statistically significant associations is termed 'data trawling' (347). For this research, the important findings are not affected by such problems but the crosstabulations are. An indication that erroneous significance testing has occurred is when the results of testing do not make sense with regard to the research question or other data or only positive tests are reported when a substantially larger number of tests had been undertaken. For the crosstabulation section of this research, it is not possible to compare the results with other data and therefore it has to be accepted that a small number of significant results may not indeed have significant associations. The research questions for this survey were quite specific in nature and the data analysed accordingly. Although crosstabulations of data by age, gender, experience, country of training and rurality was undertaken, these were of minor import to the main findings that prioritised issues within the main questions.

5.11.3 Other methodological considerations

5.11.3.1 Not explicitly naming the 'primary health care' versions of diagnostic schemata

Reflecting on the survey, it is not entirely clear that the question concerning diagnostic schemata referred to the primary health care versions of the standard diagnostic systems. The question posed was: "Do you use diagnostic classifications such as DSM-IV or ICD-10 when making a diagnosis of mental illness?". It is possible that some respondents may have not considered the primary care versions of these systems as included. The pilot phase of the survey did not suggest such confusion.

5.11.3.2 READ codes

The use of READ codes, a purely subjective coding system that is incorporated into almost all electronic record systems in New Zealand general practice may also have been interpreted as being part of the family defined by ICD and DSM. Comments by respondents in the open section of the survey would indicate wide use of READ codes. This eventuality was not considered in the design of this research. However, the comments from the survey would indicate that they are well aware of the limited nature of READ codes, in particular their subjective nature, and would likely to be able to distinguish a subjective coding system from an objective diagnostic system. Even if some respondents did include READ codes with ICD and DSM systems, the finding that 82% of respondents either never or rarely use such diagnostic systems is still very significant. Separating out and excluding READ codes could have increased this figure.

5.11.3.3 Time lapse

The design phase of this research was undertaken in 2006 with data collection soon after. Since then, and during the data collection phase, the data analysis and the write-up of the research, a series of papers were published that had direct bearing on this research and its meaning. Two papers published in 2008 (259, 260) gave credence to critical realism as a theoretical stance of particular value in health care as well as a significant paper by Thomas on the theoretical stance of general practice published in 2006(330). The complexity of patients reactions when told of a diagnosis of mental

illness based on screening by Wittkampf et al was published in 2008(340). The paper revealed much about the potentially adverse outcome of blind adherence to diagnostic protocol, yet this would seem to be the position to which general practice is being pressured by health funders, advocates of population health and specialty psychiatry. Patient concepts of depression and therefore resistance to medicalisation of their symptoms was reported by Cornford et al in 2007 (142). The imperative of management over diagnosis from a patient perspective, as exemplified by the paper by Moeke-Maxwell et al, has received prominence since 2006(143).

Had such information been available in the design phase, it is possible that the research would have subtly shifted. Rather than designing a mixed methodology approach with justification of both relativistic and positivistic positions, a critical realist epistemology would have provided a simpler and more appropriate theoretical stance and analytical framework.

The recent patient focused research shifts the sense of power in a general practice consultation. Much of this research was envisaged as difficulties that diagnostic systems cause general practitioners in their application to the work of general practice. It may well be that current diagnostic systems cause patients difficulty when applied and that general practitioners discomfort with these systems is partly or substantially symptomatic of this.

5.12 POTENTIAL SOLUTIONS

A number of potential solutions to the issue of low rates of diagnosis of mental illness in general practice have been described in the literature. These will be discussed in the light of this research and other research covered in the literature review. What is clear from this research is that general practitioners are not adverse to the concept of a diagnostic system. Indeed there is the perception that significant benefits could occur as a result of such a system that are based on improving management decisions. However, there are some key design and performance indicators that need to be met. The first issue in discussing solutions is to clearly separate the logistical problems identified from those of a more philosophical nature. As previously discussed, the theoretical construct of positivism that is prevalent in current diagnostic systems is at odds with the intuitive way that general practitioners work.

5.12.1 Problems of 'theoretical stance'

Although some solutions to the low utility of current diagnostic systems have been offered (and will be discussed below), they still have a sense of symptomatic relief rather than causative cure. The intense debates over diagnostic schemata that are occurring in specialty psychiatry would, on the surface, seem somewhat self destructive for that community of practice; as previously discussed, diagnostic schemata reflect the philosophical foundations of psychiatry and no discussion on schemata can be complete without addressing and questioning those foundations. The contrary argument is that such debate is intrinsically healthy, if somewhat painful, as it can facilitate fundamental change in the practice of psychiatry and does promote a sense of communal identity through shared angst.

General practice, on the other hand, has paid little attention to its theoretical constructs. There is a glaring lack of research or robust discussions of ontology, epistemology and theoretical perspective relevant to general practice. There is no described unifying theory underpinning the work of general practitioners. Assumptions regarding evidence based medicine representing the epistemological foundation (with its positivistic inference) appear, from time to time, but gain little foothold and with good reason. Without an explicit underpinning theoretical framework, it is impossible to have conversations about the nature of general practice and how it should evolve with respect to both its wider environment and enhanced self understanding.

The quiet acquiescence to challenges of poor recognition of psychiatric disorders in general practice caused by poor uptake of diagnostic systems alluded to previously is symptomatic of a lack of theoretical framework; it is difficult to reply to ontological and epistemological arguments from secondary care when there is lack of understanding within the community of practice of general practitioners as to exactly what its own ontological and epistemological position is. Unfortunately, the absence of a robust counterargument is seen externally as tacit agreement that general practitioners simply do not follow the positivistic rules that are common, shared and convenient to specialty psychiatry, public health physicians, health funders and other stakeholders in mental health.

If it is assumed that general practice should embrace the same theoretical understandings as other medical specialties, the failure of general practice to adhere to

the 'rules' of medicine can be interpreted as noncompliant and recalcitrant. The rebellious teenager is thus treated with combinations of paternalism and tolerance. Shapiro commented:

> For years, family medicine has been plagued by an image-problem within the larger community of medicine. Family practice has often been accused of being routine, trivial, a specialty without a specialty. Even being specialists in 'the family' rarely gained family physicians credibility in the world of academic medicine(348).

This is an uncomfortable and unnecessary place for general practice to exist. Although written in 1992, little has changed since. Shapiro goes further and comments on the role of research in providing solutions to this difficulty: "The implicit meanings we attach to research will have a similarly significant impact on determining the course and shape of the discipline of family medicine over the next decade". It is postulated here that general practice is in need of careful and considered attention to its ontological and epistemological foundations. It may well be that critical realism provides some answers to the internal conversations within this community of practice but many of these conversations have yet to take place.

Aside from the paucity of understanding regarding the theoretical understanding of general practice, the very limited research regarding the needs of those with mental illness is of note. There is a small but growing body of research that suggests those who suffer from mental illness have a multitude of other life difficulties all of which compete for attention. Assuming that the existence of mental health issues should prioritise mental health treatment over other imperatives may well be unrealistic and inappropriate.

5.12.2 Possible solutions to theoretical stance

The literature promotes several quite different models of conceptualising mental illness as suitable for use in general practice:

1. Promoting current diagnostic systems, in particular the primary care versions of DSM-IV or ICD-10. This research would strongly support the notion that these systems are inappropriate for use in general practice. The logistical issues (training, availability and integration with electronic clinical record systems) may be solvable

by commitment of substantial resources. However, the more fundamental issue is the inappropriateness of a categorical and dichotomous diagnostic system in a community of practice that embraces continuous and dimensional diagnostic processes. Further, this research highlighted the expressed need for decision support tools, particularly over pharmacological management of mental illness, a feature missing from current diagnostic systems.

2. The "Competing demands model", as promoted by Klinkman, outlines a different way forward(162). Although discussed by Klinkman with regard to depression in a primary care context, nevertheless the model does suggest some different concepts in both diagnosis and treatment relevant to mental illness in general. The key concept is to place mental health issues within the context of alternative clinician and patient priorities, such as management of acute or chronic illness or other matters that have become a priority. The clinician, patient and practice ecosystem are considered separate entities with their own domains that exist inside the domain of a policy environment. The advantage of this model is that the traditional view of low diagnostic rates (lack of clinical information or lack of application of clinical information) is reconceptualised as matters of prioritisation in a complex environment. There is evidence that this model offers a useful understanding of patient influenced decisions that influence management away from guidelines(163,164). Klinkman's model, however, represents a description of the complexity of diagnosis in general practice rather than a theoretical stance. There is no attempt to link observation to theory and therefore no wide background of research from which to support arguments or develop concepts. There is no discussion on development of decision support and the model does not lend itself to decision support.

3. Values based practice. This proposal is similar in many respects to Klinkman's "Competing demands model". Its use is in providing a framework in health care decision making where dissimilar and potentially conflicting values are brought to the decision making process. The argument presented is that diagnosis in psychiatry is laden with values, irrespective of the assumptions of neutrality inherent in systems such as DSM that are derived from a positivistic standpoint(349). Adding values represents a sign of values complexity rather than scientific deficiency. Although this

model has gained some traction, there are important aspects of reliability and validity that need substantial further work before it could be widely implemented(350).

4. The prototypical disease system. In discussing the limitations of categorical diagnostic systems, Jablensky suggested a prototypical method: "Whereas a category must be defined in terms of necessary and sufficient characteristics, a prototype is analytically derived from multivariate descriptions of real patients and measurements of their attributes"(351). This creates overlapping entities with fuzzy borders and does not exclude the possibility of illness fitting criteria for several diagnostic entities simultaneously. The immediate attraction of such a model is its fit with the continuous rather than dichotomous nature of mental illness that is more appropriate in general practice. Dimensional aspects are integrated with the concept because 'goodness of fit' is part of the prototypical concept.

      The prototypical system has strong parallels to expert thinking in medicine. Boreham draws attention to the dual architecture of thinking; explicit and implicit modes(352). Explicit methods are slow, cumbersome and follow logical reasoning, much like mapping symptoms against criteria. Implicit thinking is fast, intuitive and effortless. It is based on wide stores of knowledge that are 'chunked' together in new formulations(242). As commented by Bordage, "The selection of an appropriate diagnosis is based on complex semantic connections. Medical students run the risk of ignoring these semantic strategies if their education emphasises solely the enumeration of the symptoms and signs of various diseases"(243). If indeed prototypical thinking is closely aligned with some aspects of expert thinking, a prototypical diagnostic structure may well offer considerable advantages. The unknown factor, however, is how reliable such a system would be.

5. The DSM-V. The latest iteration of the DSM family is due for release in 2012. One purpose for the revision, as stated by Kupfer Regier and Kuhl, was … "not to provide a more advanced reference and clinical utility guide for American psychiatrists; rather, it is to provide a global clinical tool applicable to a variety of multicultural populations"(353). Such comments are important as they are made by some of the leading architects of the DSM-V. There is also the clear intention that DSM-V and ICD-11 will function as companion texts. The duality of purpose of DSM will remain with both research and clinical imperatives. The major changes envisaged pertain to

issues of validity and assessment of disease severity and disability. The paper also openly discusses the appropriateness of dimensional categorisation as extending the current dichotomous system. An excerpt from their paper concerning dimensional categories indicates current thought and potential future directions.

- The DSM-V could benefit from offering explicit criteria for both categories and (not or) dimensions.
- For any specific psychiatric disorder, a number of aspects could be conceptualised and assessed dimensionally.
- Recognition of cross-cutting dimensions in the DSM could also yield important benefits for research and practice.
- Dimensional definitions could encourage sensitivity to development, gender and ethnicity.
- Clinicians think dimensionally and welcome explicit dimensional concepts.
- Bottom-up research to inform DSM-VI could be facilitated by dimensions in DSM-V

These proposed changes are substantial and far reaching. They answer some of the reasons as to why current diagnostic schematas are not used by general practitioners. Of considerable concern, however, is that primary care needs are not mentioned in the entire paper. A Pubmed search for this research in early 2009 found 227 research articles on the DSM-V but not one of these focused on primary care issues within the proposed changes. The dimensional aspect of the proposed changes answers only one of a range of concerns outlined above. However, the DSM-V could represent a significant forward step.

6. The development of a theoretical stance appropriate to the profession. This will be addressed in the section on recommendations for further research below.

5.12.3 Possible logistical solutions
The current position is an uncomfortable one; there is consensus that a problem exists (inadequate recognition and management of mental health issues in general practice) but solutions have almost invariably been presented from a secondary care position

and have disappointed when implemented. Yet the concept embedded in the solutions offered, a systematic method of diagnosing and recording mental illness, is not without merit.

5.12.3.1 The process of diagnosis

The process of making a diagnosis while using diagnostic criteria such as DSM-IV and ICD-10 is conceptually relatively straightforward; symptoms are matched to criteria. In specialist psychiatric practice, there is usually little doubt that mental illness exists for any given patient. Indeed, if it doesn't exist, the involvement of the specialist ceases. It is accepted that this represents a simplistic version of what can be a complex process, but nevertheless does describe the fundamentals of a naturalistic or categorising system.

The process of diagnosis for general practitioners is commonly very different. Although formal diagnostic systems are not used, this does in no way imply a rejection of diagnostic systems. Indeed the results of this research indicate strong general practitioner support for an appropriate system. The participants in the focus groups for this research were somewhat unsure concerning the process by which they made a diagnosis of mental illness. Previous knowledge of the patient was mentioned several times as providing background information against which current behaviour could be compared. Others talked about clinical intuition, pattern recognition and being aware of how they were feeling during an interview as key steps in arriving at a diagnosis. The participant general practitioners were aware that often the diagnosis of depression or other mental illness was not part of the presenting complaint brought by a patient to a consultation.

5.12.3.2 Practice guidelines

Clinical practice guidelines assist practitioner decision making according to the concept of best practice. The collective history of published guidelines presents a disappointing tale of misplaced energy, time and commitment as levels of uptake of guidelines has been poor(354). As noted by Kotze and Brdaroska, "Simply publishing guidelines that do not consider the setting of the clinician's practice, the characteristics of the practitioner, the characteristics of the message, the need to bear in mind incentives, and the preparedness of practitioners to change may amount to a lot of effort for little gain"(355). This research revealed a somewhat jaundiced view of guidelines, in particular, the number of guidelines that were never used. Of note was

the expressed need for better information to inform patient management. This would suggest that guidelines, delivered in the form that has traditionally been the case in New Zealand, would have poor utility for effecting change.

5.12.3.3 Key success factors for guideline implementation

A meta-review by Francke et al outlined a set of criteria for successful implementation of clinical guidelines(356). Simplicity is the most important factor that influences the uptake of a guideline, a feature strongly supported by the results of this research. Ease of understanding, ease of use and having no requirement for additional resources are characteristics of a simple guideline. Having adequate time to undertake the added work was also important. The involvement of the end users in the development of the guideline is more problematic with evidence to support both inclusion and exclusion. A multifaceted approach to implementation that includes educational interventions, support and audits is more likely to be successful. These findings are supported by other research where the authors list clinician factors (age, level of experience, sociocultural background) as being a key variable in uptake (52). Crucial elements of the tool itself include time lag between information request and receipt, both currency and consensus of information and ease of interface. Organisational factors include the culture of the organisation as well as operational aspects such as availability of computers.

5.12.3.4 Problems associated with paper based guidelines

The study by Croudace et al, previously reviewed, on the implementation of the ICD-PHC diagnostic system in a 30 practice randomised controlled trial in Britain found no evidence that implementing the diagnostic system improved quality of care(52). Possible explanations offered for the negative result were failure of general practitioners to read the guidelines, failure to implement the guidelines and failure of content of the guidelines. The paper also details the method by which the guideline was distributed to participant general practitioners; paper copy. No indication of the level of computerisation in the general practices was given. The level of general practice computerisation in the UK was 75% in 1993 and 98% in 2003 (357). It is likely that the study, completed in 1998, would have included a high proportion of computerised practices. As discussed above, a key factor for successful intervention with implementing diagnostic schemata found in this research was the integration of the diagnostic schemata with the practice management system. Using paper based

guidelines on diagnosis and treatment in computerised practices was likely to be a contributing factor to the negative result. A trial of the ICD-10 primary care version in England was undertaken in 1994 using laminated cards as prompts(358). Those general practitioners using computers for clinical notes requested a computerised version of the prompts as they felt the laminated cards were a barrier to use of the diagnostic system.

5.12.3.5 Computerised Clinical Decision Support (CCDS) in psychiatry
There were strong indications from this survey that integrating any proposed diagnostic system into the computerised note system would be a key success factor. Further, the diagnostic system would preferentially provide decision support regarding pharmaceutical choice and referral advice. As defined by Garg et al, computerised clinical decision support systems are:

> … information systems designed to improve clinical decision
> making. Characteristics of individual patients are matched to a
> computerized knowledge base, and software algorithms generate
> patient specific recommendations. Practitioners, health care staff,
> or patients can manually enter patient characteristics into the
> computer system; alternatively, electronic medical records can be
> queried for retrieval of patient characteristics. Computer-generated
> recommendations are delivered to the clinician through the
> electronic medical record, by pager, or through printouts placed in
> a patient's paper chart (359).

The development of computerised clinical decision support systems has several advantages over more traditional paper based systems. Updating of clinical decision information can occur remotely, the tool can be incorporated into existing computerised clinical notes records and the tool is constantly and instantly available. The qualitative phase of this research revealed three themes regarding the purpose of diagnosis all of which could be considered as decision support; assisting in choice of pharmacological management, assist in the decision regarding referral and assessing the safety of the patient or others.

5.12.3.6 Evidence of effectiveness of CCDS

The systematic review, by Garg et al quoted above, of the effect of computerised clinical decision support found 64% of the 97 studies meeting inclusion criteria were successful in improving practitioner performance. Automatic prompting of users rather than user initiated system was associated with greater success. Of the 97 studies included in the review, four were diagnostic systems relating specifically to mental health. These will be discussed separately.

In the study by Schriger et al, a computerised psychiatric interview was completed before patients were interviewed by emergency department doctors and was made available to them(360). The purpose of the study was to increase the detection of occult psychiatric illness in the emergency department. No difference was found in the rate at which a psychiatric diagnosis was made despite 42% of patients having a mental health diagnosis made by the computerised psychiatric interview and being available to the doctor.

A similar study by Rollman et al assessing the effects of electronically informing general practitioners of a diagnosis of depression made by use of a screening tool found no improvement in depression recovery rate 6 months after diagnosis(361). A further study using self administered computerised assessment prior to seeing a general practitioner and computerised prompting for the intervention group found no difference in clinical outcome at 6 months but a modest improvement at 6 weeks(362).

A study undertaken in a mental health clinic demonstrated better screening rates and better documentation when using a computerised reminder system rather than a paper based system. However, it should be remembered that the study had poor transferability to general practice due to the setting of a mental health clinic(363).

Computerised patient specific guidelines were trialled in a study of 762 patients with either depression or anxiety attending five general practices in England(364). Prior to seeing the general practitioner, patients were randomised to either an active arm where they filled out a computerised psychosocial assessment or a control arm where no such computerised assessment was undertaken. In the active arm, the assessment was available to the general practitioner. The outcome at 6 months was not statistically different for the intervention arm over the control arm.

The addition of a severity ranking may improve the response of general practitioners to indications that a patient has depression. A small pilot study

demonstrated that the intervention rate of general practitioners to the results of screening tools for depression was increased by availability of information regarding severity (using PHQ-9) as well as diagnosis(365). This accords well with the desires of general practitioners expressed in this research.

5.12.3.7 Conceptual issues with CCDS

Of the five studies reviewed above, only three were directly relevant to general practice. The purpose of the interventions in the studies is worth further consideration. Using self administered computerised diagnostic tools prior to seeing a general practitioner is superficially attractive as a method to improve the performance of general practitioners when diagnosing mental illness. However, there may not be transparency concerning which stakeholder's agenda is being met. In all of the above studies, the purpose of intervention was to improve quality of care. The purpose was not to make the work of the clinician easier or more fulfilling or more efficient. Indeed, there was little attempt to involve the general practitioners in the development of the research project. Several assumptions were made, such as a high rate of missed diagnoses of mental illness by general practitioners and poor outcomes from general practitioner intervention in mental illness. The underlying reasons for such assumptions were not questioned. In particular, outcomes were commonly measured using tools more appropriate to secondary care.

As succinctly described by Wears and Berg, such an approach to CCDS may not be helpful in the implementation of CCDS projects as the impetus for implementation is derived from business processes rater than improvements in clinical care, but it is the personnel involved in clinical care who are made responsible for implementation (366).Thus very little of the benefits are seen by front line staff who often have little voice in the decisions over choice of tool.

5.12.3.8 Conflict between CCDS and clinical thinking

The above study also describes critical differences between a clinical and technological approach. Computerised support systems are linear by their very nature(367). They can be universally applied, can be proactive and do not require teamwork(368). Data is bimodal with little room for uncertainty. The process of diagnosis is both rational and objective.

Conversely, clinicians behave in a non-linear fashion(369). Their work is reactive, opportunistic and collaborative. Interpreting complex soft data is integral to the process of diagnosis and management. Indeed, clinical intuition by definition is a non-linier process that defies replication using rational and objective decision making. The interaction between these two very different ways of thinking does not always have the intended result, indeed failure is common in such projects(370). Campbell suggests five mechanisms by which CCSD can affect clinical work(371). These are:

1) introducing or exposing human/computer interaction problems,

2) altering the pace, sequencing, and dynamics of clinical activities,

3) providing only partial support for the work activities of all types of clinical personnel,

4) reducing clinical situation awareness, and

5) poorly reflecting organizational policy and procedure.

Careful planning is required to ameliorate such unintended consequences.

5.12.3.9 Fit between CCDS, current schemata and requirements noted by general practitioners

The ability of current diagnostic schemata to meet requirements of a diagnostic system, as expressed by general practitioners in this research, can be compared to both guidelines and CCSD.

Table 50. Comparison between diagnostic schemata, management guidelines and computerised decision support

REQUIREMENT	DSM-IV/ICD-10 including PC versions	GUIDELINES	CCSD
Integrated with PMS	No	No	Yes
Assist with pharmacological management	No	Yes	Yes
Advice on other options for care	No	Yes	Yes
Advice on referral to secondary care	No	Yes	Yes
Simple	No	No	Potentially
Immediately available	No	Potentially	Yes
Communication with secondary care providers	Yes	Yes	Yes
Communication with patient	Questionable	Potentially	Potentially
Same system across primary and secondary care	Yes	Potentially	Potentially
Limit coding options to common illness seen in general practice	Questionable	Yes	Yes

The opinions regarding how current schemata, guidelines and CCSD fit with general practitioner requirements are, of course, open to debate. The primary care versions of both ICD and DSM were designed to be appropriate for primary care use. Commenting on the DSM-IVPC, Pingatore noted "First, psychiatric phenomena that are commonly encountered in primary care settings are emphasized. Second, the manual is formatted to be concise, explicit (i.e., step by step) and practical, with limited use of psychiatric jargon"(372). The very limited uptake of the primary care versions of either schemata would raise concern as to just how appropriate they are to the work of general practice as well as reflect on the poor availability of schemata.

Even if there was significantly greater familiarity with these diagnostic systems, a range of other factors remain as barriers to implementation such as lack of management focus and inability to integrate with an electronic clinical record.

5.13   OPPORTUNITIES FOR FURTHER RESEARCH

5.13.1 Patient orientated research

As previously mentioned, there is surprisingly little literature that focuses on the needs of those who have mental illness as defined either by the intuitive dimensional framework of general practice or the formal categorical methods of psychiatry. A paper reviewed in the literature would seem to spearhead different thinking about the needs and social complexity of those with mental illness and how breath of service provision needs to echo such needs. Unidimensional concepts of desirable outcomes from general practice also need to be supplanted by patient orientated models that acknowledge the social nature of the consultation. These lines of research need to be developed and placed into the wider context of managing mental illness in general practice.

5.13.2 Research on theorising in general practice

It is clearly difficult for general practice, as a discipline, to respond adequately to criticism by those from without over issues of inadequate performance when the internal framework that defines performance is poorly developed. General practice is both young and old. The emergence of specialist and subspecialist doctors is relatively new. As a group, they have gained status and power rapidly in a hierarchy that is strongly knowledge based. Further, as expected in a positivistic framework typical of many specialties, what both drives and rewards individuals within a profession is the reductionism of technical rationality. As explained by Schon, "… professional activity consists in instrumental problem solving made rigorous by the application of scientific theory and technique"(41)(p21). Conversely, general practice, without a specialty area of knowledge, has languished in this environment. The result of lack of influence and disempowerment has been the relative absence of general practitioners from teaching in medical school and continued messages from specialists devaluing general practice.

Answers to this long standing problem have been varied but many have attempted to simply promote the knowledge base of general practice as a quasi

specialist knowledge in its own right. However, this still positions general practice within the theoretical structure of positivism. Further, while acknowledging that some aspects of medical knowledge are found almost exclusively in general practice and not in specialty medicine, the concept of breath of knowledge substituting for depth is unreasonable.

Attempting to justify in detail how general practice should go about the task of reviewing and redefining its theoretical stance is beyond the remit of this thesis. However, the conceptual results of this research pertaining to differing concepts of validity that are being driven by contrasting theoretical positions may well be applicable to how general practice interfaces with the remainder of medicine. If this is so, it is all the more important for general practice to deeply understand its philosophical stance.

5.13.3 Distress and disability masquerading as mental illness

Reflection on the research findings brought up issues of general practitioners perceptions of the importance of distress and disability in a consultation. The literature clearly indicates that the presence of significant distress and disability is associated with a higher chance of a diagnosis of mental illness being made by a general practitioner irrespective of 'caseness' according to diagnostic systems. Similarly, low distress and disability is associated with low diagnosis rates irrespective of 'caseness'. The survey revealed that 51% of general practitioners considered that the diagnostic schemata do not reflect mental illness seen in general practice. It is likely that what was measured reflected general practitioners ambivalence over the lack of a dimensional factor to diagnosing mental illness according to schemata.

However, other explanations are also possible. It may be that general practitioners believe that some presentations to primary care do not meet 'caseness' for diagnostic systems but still represent mental illness. The literature would suggest that some general practitioners may deem significant distress and disability to be mental illness regardless of the presence or absence of any other symptoms. This in turn raises the difficult questions of who currently has the 'right' to create a label consistent with a diagnosable mental illness that is associated with a set of symptoms, who is not represented at the creation of a label and who should be. This research and the research covered in Chapter 2 would suggest that significant distress with

associated disability falls outside the boundaries of mental illness as defined by the discipline of psychiatry.

Both those with significant distress and their general practitioners may find the label of 'depression' or 'anxiety' or 'affective disorder' useful manoeuvres in management. The decision to trial a course of antidepressant medication may hinge on being able to attach an appropriate label to a set of symptoms. Being able to provide a label for symptoms may be of considerable relief to some. The outcome of treating those with distress alone with an antidepressant medication is, of course, unknown. A more relevant question would be the impact of general practitioner intervention and management (which may include a diagnostic label and/or a prescription and/or referral for counselling) on significant distress without 'caseness' as defined by current diagnostic systems.

5.13.4 Defining mental illness

As discussed above, the construction of mental illness has been firmly entrenched in the community of practice of psychiatry. The DSM-V is in construction and is likely to have some fundamental differences with prior iterations, particularly concerning the incorporation of a dimensional element to a diagnosis. Despite such progress, the more fundamental issue of what represents mental illness is still relevant. It is likely that the notion of mental illness would look substantially different if other stakeholders were to have increased influence on what represents 'caseness' and therefore is recognised, researched and legitimised. The sometimes uneasy interface between society and medicine is particularly heated in the area of mental illness with the debate commonly focusing on what represents a mental illness and why. An essay in the popular magazine 'Harper's Magazine' entitled "Manufacturing Depression" is somewhat typical(373). The author reviews the DSM-IV for the provisional diagnosis of Minor Depression and states:

> Research that uses this diagnosis thus has a twofold aim: to provide
> another FDA-approved indication for a particular drug and to give
> Minor Depression medicine's most lucrative imprimatur – the five-
> digit code that allows doctors to bill insurance companies for
> treatment.

Again, distress with its various manifestations would likely be given prominence if society in general were more equal partners in the creation of recognised entities in mental illness. These controversies are not new. Foucault wrote about one of the influential figures in the development of concepts of mental illness, Philippe Pinel, who was head of a French asylum in 1793: "In one and the same movement, the asylum becomes, in Pinel's hands, an instrument of moral uniformity and of social denunciation"(374).

As discussed in Chapter 1, the influences on the development of a tool such as the DSM are widespread and those with vested interests include large organisations that require diagnostically related groups for certainty in funding, resource allocation and planning. Thus, diagnostic systems have been developed where utility has been strongly influenced by the needs of organisations involved in delivering health care and rather less by those receiving it.

5.13.5 Subsyndromal disorders

The literature review for this research found a burgeoning area of interest to academic psychiatry; subsyndromal disorders. There is likely to be significant crossover between the distress and disability seen by general practitioners and entities known as subsyndromal disorders. The research papers on these disorders would appear to have significant limitations and there is certainly lack of clarity regarding effectiveness of treatment. It is likely that these disorders, alongside the vast majority of depression and anxiety related disorders will be seen and treated solely in primary care. There is very little research from either a patient or a general practitioner perspective on these common but controversial disorders. There also has been little academic interest on the ethics of the medicalisation of what many people may feel are normal life events. Such deeper conversations, both within and outside the profession of medicine are becoming increasingly important to hold.

5.14 CONCLUSION

This chapter has discussed the results of the research with reference to other published work. The minimal use of diagnostic schemata found in this study accords well with the very limited other published information available. Of particular note is the body

of literature that supports the notion that even when used, current diagnostic systems do not improve the detection rate or outcome of mental illness.

Both this research and other published work support the notion that general practitioners are attuned to disability and distress in their patients. Distress and disability are usually, but not always, found in those with mental illness as diagnosable using diagnostic schemata. Conversely, high levels of distress and disability can exist without concurrent mental health issues that achieve 'caseness' according to criteria of diagnostic schemata.

There are both logistical and management issues associated with low uptake of diagnostic schemata. There are logistical issues with low application of diagnostic schemata in general practice; poor educational opportunities to become familiar with these systems are of particular note. Integration of any diagnostic system into electronic clinical records is a prerequisite to achieve high levels of application across the profession of general practice in New Zealand.

Management imperatives are prioritised over the diagnostic system. Management includes pharmacotherapy, referral to secondary care or other primary care based practitioners such as counsellors etc. Any diagnostic system will have to assist with management issues if the system is to be considered to have high utility by general practitioners.

There are fundamental differences between the disciplines of psychiatry and general practice. One manifestation of these differences is the comparative use of diagnostic schemata, 89% of psychiatrists reporting routine use in comparison to 9% of general practitioners. Aside from the logistical and educational issues previously mentioned, differences in presentation, differences in process and differences in the epidemiology of presenting illness require unique approaches by each discipline. The diagnostic schemata currently in use are a manifestation of the work of specialty psychiatry and its philosophical background.

It would appear that differences in how specialty psychiatry and general practice construct the term validity when diagnosing mental illness is responsible for differential use of diagnostic schemata. Specialty psychiatry has a well defined theoretical stance that is positivistic in nature. General practice, on the other hand, has a poorly developed sense of theoretical construct. The results of this research would suggest that general practitioners instinctively take an approach that is inclusive of both positivistic and interpretive (or relativistic) frameworks. Critical realism, as a

defined epistemological entity, would seem to describe how general practitioners function. Statistical analysis would indicate that the survey demonstrates sound psychometric properties.

CHAPTER 6 – CONCLUSION

6.1 INTRODUCTION

This chapter will summarise the research question, major findings and generalisability of the research.

6.2 THE RESEARCH QUESTION

The research question arose from curiosity over the criticism levelled at general practice concerning the low detection rate of mental illness by general practitioners. The major focus of criticism centered on inadequate uptake and use of standard diagnostic systems (ICD-10, DSM-IV and their primary health care versions) and, correspondingly, solutions offered invariably entailed encouragement to use such systems. Yet over 20 years of research reports signalling low diagnostic rates of mental illness in general practice and encouragement to use diagnostic systems would seem to have had negligible impact on improving the rate of diagnosis. At face value, the argument to use standard diagnostic systems would seem both logical and feasible. An immense amount of work has informed the development of such systems and impressive results have been demonstrated concerning reliability of diagnosis in secondary care environments. The primary care versions have been specifically modified to meet the needs of general practice and other primary health care workers. In the face of this plausible contention, there is a paucity of research from general practice that presents a counter view or challenges the assumptions implicit in the argument. This silence signals an inappropriate position of quiet acquiescence.

In understanding the stand-off between general practice and specialty psychiatry, several pieces of the puzzle were missing. There was no robust research that quantified the use of diagnostic systems in general practice. It was unknown if diagnostic systems were being used but inappropriately so or if indeed the systems were not being used at all. There was little research that sought to understand why general practitioners did not use them. Aside from possible logistical reasons for poor uptake (such as difficulty accessing the systems and incompatibility with electronic clinical record), were there deeper issues of relevance concerning the understanding of mental illness by general practitioners? Do general practitioners perceive mental illness differently than their psychiatric colleagues and others who criticise the performance of general practitioners?

The term 'utility of diagnostic systems' was defined in Chapter 2 as implying not only utility of diagnosis (ability to predict prognosis, management and add to research and understanding) but other aspects important to uptake such as ease of use, availability of system as well as the 'fit' with current work systems and practices. By understanding the issues within the overarching concept of utility of diagnostic schemata, it was believed that answers to these questions could be found.

6.3   THE RESEARCH ANSWERS

Diagnostic systems are almost never used by general practitioners when diagnosing mental illness. This is in stark contrast with specialist psychiatrists who almost always use at least a part of such systems. Several logistical factors were revealed that offer some explanation for this. General practitioners widely reported poor knowledge and experience of diagnostic systems. This in itself colours the remaining data that emerged regarding why general practitioners do not use such systems as with poor knowledge and experience, it is difficult to comment on usefulness. Even if this deficit in experience and knowledge were to be rectified, lack of integration of such systems into an electronic clinical record system remains as a considerable and very separate obstacle.

As well as logistical issues, some deeper conflicts emerged from the research. Current diagnostic systems are heavily integrated into the world of psychiatry; they reflect the well enunciated theoretical basis of psychiatry (positivism) and represent an overt manifestation of psychiatric philosophy; a semantic artefact of a specialist psychiatric community of practice. General practice, on the other hand, has no such well considered theoretical understanding. What emerged from this research were strong indications that general practitioners instinctively take a 'critical realism' approach to their work that embodies elements of positivism with the flexibility and patient centeredness that constructionism permits.

Concerns over the rigidity of schemata reflect the perceived need by general practitioners to be able to position mental illness in alternate states than the dichotomous and categorical nature associated with wholly positivistic theory. The emphasis on degree of distress and disability as contributory factors of 'caseness' for diagnosing a mental disorder characterise the dimensional and continuous properties of mental illness as understood by general practitioners in comparison to the

categorical and discontinuous properties of mental illness diagnoses that result from applying current diagnostic systems. The approach taken by general practitioners to the diagnosis and management of mental illness would reflect a complex interplay between level of disability and distress, the utility of the label in the development of a management plan, the acceptability of the diagnostic label by the patient, medico-legal considerations and avoidance of diagnostic error. Thus, imperatives of management gain precedent over the imperatives of diagnosis. Indeed, if management is not possible, either through unavailability of resource or ineffective resource, diagnosis is less likely irrespective of caseness with diagnostic criteria.

There is a perceived need amongst general practitioners for decision support concerning management of mental illness and the diagnostic process has a pivotal role in such decision support mechanisms. There is also a desire for effective communication between primary and secondary providers of care for which diagnostic schemata would provide a common language. Integration with existing information systems is a key success factor for increasing utilisation of diagnostic classifications. However, despite the expressed need and undoubted usefulness of a diagnostic system in mental health for general practice, it should not be assumed that such a system should be based on the positivistic framework of specialty psychiatry. Critical realism presents an alternative theoretical perspective that offers potential solutions to the limitations of current diagnostic systems.

6.5   GENERALISABILITY OF THIS RESEARCH

The question of generalisability has two different aspects; generalisability within New Zealand and generalisability to other countries. A survey is usually based on a sample of a larger population. Therefore the generalisability of the findings to this larger population is of crucial importance. There are many components of the research that need to be considered when assessing the generalisability of the findings that relate to the robustness of the research process. For this research, the careful and detailed attention to validity, the rigour of the sampling process, the favourable comparison between the sample population and the population from which the sample was generated and the statistical and descriptive analysis of the data would indicate that the results are generalisable to Fellows of the R.N.Z.C.G.P.

Care must be taken over generalising the findings of this research to other medical systems. There is difficulty in describing a unifying theory for general

practice as it is a discipline with wide determinants to both structure and interface between service and patients that differ from country to country. Arguably the most important determinant is the mediating role that a gatekeeper function entails. In some cases, general practitioners are placed in a universal gatekeeper role where access to almost all non-emergency health needs are mediated by a general practitioner (New Zealand, England). At the other extreme is an almost total lack of general practice services with access direct to specialist care at the discretion of the health consumer (Korea). A range of intermediate models exist such as the USA where traditional gatekeeper general practitioner services exist but are sparse and far from universal in their application. The literature on the worldwide use of diagnostic systems by general practitioners is very sparse. It is likely that the findings of this research are generalisable to a somewhat wider group of general practitioners, particularly those who work in comparable health systems such as Australia, Canada and the British Isles.

APPENDIX 1 - SURVEY

GENERAL PRACTITIONERS USE OF DIAGNOSTIC CLASSIFICATIONS IN MENTAL ILLNESS

Please place a tick in the appropriate box of each row for every question.

1. Do you use diagnostic classifications such as DSM4 or ICD 10 when making a diagnosis of mental illness?

Never	Rarely	Half the time	Often	Always

2. When you do **not** use either of these classification systems, what are your reasons?

Reason	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Don't reflect mental illness seen in general practice					
Too rigid					
Not management focused					
Too complex					
Poor reliability of coding between practitioners					
Limited experience and knowledge of schema					
Other reasons					

3. Please rate how often each of the following factors influences you when you **apply a diagnostic label to mental disorder**:

	Always	Very often	Sometimes	Rarely	Never
Medico-legal documentation					
Communication with other health workers					
Assist in decision regarding referral					
Assist in choice of pharmacological treatment					
Providing the patient with a label for their symptoms					
Assessing the safety of the patient or others					
Other factors					

4. If there were to be a new diagnostic classification for mental illness, would the following features be useful?

Description	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Gives information concerning prognosis					
Assist with decision on referral to secondary services					
Provides information that assists in distinguishing between various diseases					
Assist with management decisions on pharmacological therapy					
Assist in accuracy of diagnosis					

5. Would the following features be important to have in a new classification?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Integrated with computerised notes					
Same system across primary and secondary care					
Limit coding options to only common illness seen in general practice					

Your age: ←30   30-39   40-49   50-59   60→

Years since graduation   0-5   5-10   10-15   15-20   20-25   >25

Male/Female   Does your practice receive a rural bonus?   Yes/No

How many clinical tenths do you work per week excluding on-call: < 3   3-6   7-10

Country of **undergraduate** medical training (ring one of the following):
          New Zealand   Australia   United Kingdom   South Africa
          India   Sri Lanka   Middle East/Arab   Europe (exc the U.K.)   Other

ANY COMMENTS?

APPENDIX 2 - ABBREVIATIONS OF PSYCHOMETRIC TOOLS

A range of psychological tests have been referred to throughout this thesis. Although the brief of this research did not include a critique of these tests, a full title where neccessary and description of the function of each test as well as a key reference article has been provided.

- General Health Questionnaire (GHQ)[1]: a reliable and valid measure of general well-being and distress.

- Centre of Epidemiological Studies Depression Scale (CES-D)[2]: a self reported scale designed to measure depression in the general population.

- Self Reporting Questionnaire (SRQ)[3]: developed as a screening tool for psychological and emotional disturbance, particularly for use especially in underdeveloped countries.

- PRIME-MD[4]: tool for diagnosing mental disorders in primary care.

- SPHERE self reporting questionnaire[5]: a screening tool for common mental disorders occurring in primary care.

- Hospital Anxiety and Depression scale (HAD)[6]: a self screening questionnaire for depression and anxiety.

- Geriatric Depression Scale (GDS)[7]: a 30-item self reporting assessment for identifying *depression* in the elderly.

- Composite International Diagnostic Interview (CIDI): a survey instrument designed to identify episodes of major depression.[8]

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- Hamilton Depression Rating Scale (HDRS)[9]: a tool for measuring the severity of depressive symptoms, usually in those who have already been diagnosed as having depression.

- HAMD-17: a version of the Hamilton Depression Rating Scale

- Beck Depression Inventory[10]: 21 item questionnaire designed to measure the severity of depression.

- Inventory of Depressive Symptomatology[11]: a 30 item rating for severity of depression

- Global Assessment of Functioning[12]: a scale to rate the social, occupational and psychological functioning of adults.

- Clinical Global Impression[13]: a tool to assess treatment response in psychiatric patients.

- Wechsler Memory Scale[14]: assesses learning, memory, and working memory.

- Mini-Mental State[15]: a 30-point questionnaire used to screen for cognitive impairment

- Trail Making[16]: test of visual conceptual and visual motor tracking used to detect dementia

- Structured Clinical Interview for DSM-IV (SCID)[17]: A semi-structured interview for making DSM-IV Axis I diagnoses

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