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## **Abstract**

### **Background**

Long term conditions (LTCs) are a significant health problem faced by older people worldwide. Telephone communication is often used to deliver health care to patients and an important tool in improving access to care. Previous research has shown that primary health care nurses communicate with patients by telephone, but little is known about the way in which telephone communication can be used to benefit older patients with LTCs.

### **Aims**

To identify the range and scope of telephone use between practice nurses working in primary health care and older people with LTCs, explore which elements of this communication has been successful, and determine whether older people see telephone communication as useful for their needs.

### **Methods**

A systematic search of the literature was conducted through CINAHL, Medline, Web of Science and EMBASE between July and August 2015. Included were English language articles containing older adults, primary care nurses, and both qualitative and quantitative designs.

### **Results**

Five studies met the inclusion criteria. All were intervention studies, and none looked at routine telephone communication between nurse and patient. Most studies showed that telephone based interventions were successful in improving pre-determined disease-specific health indicators.

### **Conclusions**

All telephone communication interventions in this review focused on a specific long term condition, which they aimed to help patients self-manage. While all studies' samples included older patients, they did not consider them separately in relation to the effectiveness of the intervention. What was also lacking was the patient perspective regarding effectiveness in all but one study.

## **Telephone communication between primary health care nurses and older patients with long term conditions – A Systematic Review**

### **Introduction**

Long term conditions (LTCs) are the most significant health problem faced by older people internationally.<sup>1</sup> Significantly, multi-morbidity is increasing in the older population.<sup>2</sup> Ways of overcoming barriers to effective healthcare, including those relating to access and effective communication, are urgently required.<sup>3</sup> A particular identified priority is enabling Primary Health Care to become more age friendly.<sup>4</sup>

In this paper we defined telephone communication as any conversations between the practice nurse (PN) and the patient. In certain countries such as New Zealand, Australia and the United Kingdom the PN is traditionally employed by a General Practitioner and nurses provide care to their enrolled population from the General Practice or Surgery site. We used the term telephone communication in a broad manner, so it includes types of communication such as telephone triage and telephone consultations. Telephone communication is already recognised as a means of delivering health care, improving access to care, and a means by which patients can obtain health information.<sup>5</sup> Information and advice which is easily accessible is especially important for those with long term conditions.<sup>6 7</sup> Furthermore, having the ability to consult a health professional over the phone means patients do not need to be absent from work, they save on travel costs, and do not need to arrange child care.<sup>6</sup> Telephone consultation may also help reduce the growing costs associated with providing healthcare to the aging population, many of them living at home and needing extra support to maintain their independence. With a greater number of older people with LTCs staying at home, and many living alone, there is a growing need for affordable health care for this population.<sup>8</sup> Older people are more likely to have transportation problems,<sup>9</sup> and more mobility issues<sup>10</sup> making trips to health care professionals more difficult. In this context, telephone communication is a flexible low cost option to provide patient care.<sup>11</sup>

Specific types of telephone support have been developed and tested, such as telephone case management for patients with heart failure.<sup>12</sup> Similarly, Hunkeler et al<sup>13</sup> found that a nurse telehealth support system was more effective than antidepressants in the treatment of patients with mild to moderate depression with 58% of participants in the phone call group recovered compared with 37%

in the control group. Other studies have used non health professionals, such as lay health workers or peer support workers to provide telephone based interventions.<sup>14</sup>

Research has identified that Primary Health Care nurses already use telephone communication with patients<sup>15</sup>, although this role is often not made explicit.<sup>16</sup> General Practitioners (GPs) have also identified that they see telephone communication as integral to the routine work of Primary Health Care nurses.<sup>17</sup> Telephone consultations with nurses has been found to reduce the doctors workload and benefit patients who wish to be seen on the same day.<sup>18</sup>

However, questions have been raised about the quality and safety of telephone consultations, including timeliness to determine urgency levels particularly when a triage system is used,<sup>5, 19</sup> patients' ability to communicate about their symptoms over the telephone and the type and usefulness of information and advice provided to patients.<sup>20</sup> There is some evidence that further training in telephone communication is required for nurses,<sup>5, 13, 20</sup> suggesting that telephone communication skills can be improved to meet patients' needs.

It was with this context in mind that we sought to synthesise the evidence in this area by conducting a systematic literature review to identify the range and scope of telephone use between nurses working in Primary Health care and older people.

### **Aims**

1. To examine the extent to which practice nurse-patient telephone communication has been used previously with older people.
2. To explore which aspects of telephone communication have been successful with older people.
3. To determine whether older people see telephone communication method as useful in meeting their needs.

### **Methods**

A literature search strategy was devised and assistance obtained from a specialist Librarian. The following databases were searched- Medline, Cinahl, Web of Science, and EMBASE. The reference lists of included papers were also searched. Searches were conducted between July and August 2015.

Combinations of the following search terms were used:

1. Primary Health Care, Nurse, Practice Nurse, Primary Nurse, Primary Care Nurse.
2. Telephone, Phone, Mobile, Cell phone, Telehealth, Communication. Older person. Elderly person, Geriatric.
3. Long Term Condition, Chronic Condition, Heart Failure, Chronic Obstructive Pulmonary Disease, Atrial Fibrillation, Diabetes Mellitus, Leukaemia, Depression, Dementia, Arthritis.

Study inclusion criteria were as follows:

- Original research articles
- Articles from any year
- Quantitative or qualitative studies
- English language
- Studies containing participants who are older adults (defined as over 65 years of age).
- Studies containing participants who are practice nurses in primary care settings.

We excluded review articles and studies including residents of long term care facilities. This decision was made because residents of care facilities in New Zealand do not generally go to general practices to receive primary medical care, instead they receive doctor or specialist nurse visits in the facility. Furthermore residential care facilities have registered nurses on staff, so residents are not going to be communicating with them via the telephone

### **Study selection/ Data extraction**

Articles were first be screened by the primary reviewer (DR) using title and abstract to determine whether they met the basic criteria using a data extraction form created for this review. A second reviewer (SW) then assessed the articles to ensure they met the inclusion criteria.

Once all the eligible articles were identified, they were independently screened by DR and SW for quality using criteria developed by Hawker, Payne, Kerr, Hardey, & Powell.<sup>21</sup> The reviewers agreed on the quality of most articles, and any disagreements were resolved through discussion until a consensus was reached.

## **Data Synthesis**

A narrative synthesis was conducted to organise and combine the findings. Narrative synthesis is a recommended tool for reviews that aim to synthesize both qualitative and quantitative studies. The key element of a narrative review is that it relies primarily on a textual approach to 'summarise and explain the findings'.<sup>22</sup> Based on the framework proposed by Popay et al<sup>22</sup> a preliminary synthesis was conducted using thematic analysis to organise and compare the studies in the review in relation to how they used telephone communication and measured the outcomes. The next step was to explore the relationships between the studies and look at similarities and differences between them.

## **Results**

The search results are summarised in the PRISMA flowchart<sup>23</sup> (Figure 1.) Overall, 5 studies met the inclusion criteria (see Table 1). Of these, three studies used quantitative methodologies, one used qualitative and one used a mixed methods approach. Two of the studies were conducted in the United States (US), two were conducted in Australia (part of same research), and one was conducted in Germany.

### **Types of patient groups targeted**

All the studies had a long term condition focus. Two of the studies involved patients with type two diabetes.<sup>24,25</sup> Two studies included COPD patients,<sup>26,27</sup> and one involved older patients with heart failure.<sup>28</sup> Not all studies only included older patients (however, the studies all had a mean age of at least 65) and the number of older people in the studies was not always reported. There were no responses when we emailed researchers to ascertain numbers.

### **Purpose of study and why they chose telephone communication**

All studies found were intervention studies, none were found that looked at routine use of telephone communication between nurse and patient. The purpose of the studies varied, however a common theme was to improve self-management of a specific long term condition or comorbid condition using a targeted telephone intervention. Table 1 indicates the specific interventions and outcomes.

### **Was telephone communication a useful tool? If so which aspects were beneficial?**

Studies that focused on specific outcomes such as particular health indicators relating to diabetes, showed some improvements in parameters under study (Table 1). Telephone interventions showed improvement in blood pressure and HRQoL, and reduction in depressive symptoms for diabetes patients. Another study showed Glycaemic control was better in intervention patients but there was no significant difference in HRQoL or diabetes related symptoms.<sup>25</sup> Another intervention with diabetes patients showed significant differences in HRQoL and transiently for blood pressure and depression.<sup>24</sup>

One study that aimed to improve health behaviours in COPD patients found the intervention provided a positive change in physical activity and smoking cessation.<sup>26</sup> A patient satisfaction survey conducted by Walters et al compared patient satisfaction between telephone and videophone groups. Walters (2012a) interviewed patients about using telephone delivery of the health mentoring telephone programme and found telephone delivery was highly acceptable and enabled good rapport. Most participants found telephone health mentoring valuable. They believed that the mentors assisted in identifying goals, activities, and strategies that helped COPD self-management and their general wellbeing. They also found that telephone health mentoring helped form a partnership between the participant and the mentor, leading to the participant starting or increasing positive health behaviours. Furthermore, some participants felt a responsibility to their health mentor to accomplish some of the predetermined goals.

Patient perspectives and acceptability of the telephone service were not examined in all of the studies. In comparing communication profiles between telephone and videophone, there were no significant differences in patient satisfaction or significant difference in communication profiles over time.<sup>28</sup> The authors feel that when using technology to communicate, people become more comfortable over time with the experience.

### **How could the interventions be more effective?**

Most authors mentioned limitations of their research, and some provided insights into how the telephone intervention could be more effective. Level of engagement and commitment was seen as important for both the nurses and the patients. In the Walters study<sup>27</sup> practice nurses who were involved in providing health mentoring by telephone had no reservations about this type of

communication, but felt that the time allotted for telephone calls was often supplanted or interrupted by other tasks, and given a lower priority than face-to-face meetings.

In the Weinberger<sup>25</sup> study age and associated level of illness was considered a factor in the intervention being less effective. As planned the intervention was considered 'low intensity', meaning there was only an average of 2.5 hours per patient in increased telephone contact over the year. Their study showed a slight improvement in glycaemic control, but not HRQOL or diabetes related symptoms. One of the explanations they considered for this lack of effect on HRQOL is the fact that their sample consisted of older patients with long-standing diabetes, complications from their diabetes, and other comorbidities.

In the Mons study<sup>24</sup> they determined that an intervention specifically tailored to each individuals needs might have been more effective. Furthermore, their patients were considered challenging high-risk patients with poor glycaemic control. They also concluded that because most of the improvements in outcomes were not maintained after the end of the intervention that continuing the intervention over a longer period would be necessary to make improvements in patient outcomes more long-term.

## **Discussion**

This review identified a wide range of telephone interventions that had a specific focus on supporting targeted self-management behaviours for people with long term conditions. Whilst all the interventions had a telephone component, they were largely directed by nurses following specific protocols. Whilst all the studies had older people as participants, the interventions were not targeted specifically at older people and their individual needs. This is an important finding as older people have a higher risk of multimorbidity and targeting specific long term conditions is inappropriate.<sup>29</sup> Multimorbidity is more complex in the older person and can mean a significant increase in the need for consultation with Primary Care.<sup>30</sup> However, this may have cost implications for the older person.

Apart from nurses developing a 'rapport' with the patient it was unclear if any aspect of telephone communication contributed most to the success of the programme. Few barriers to telephone communication were identified. Although in one study while the nurses did not express reservations on the effectiveness of telephone support, they found that the time for scheduled time calls was

frequently supplanted or interrupted by other tasks. Phone calls were given a lower priority than face-to-face consultations.<sup>27</sup>

### **Limitations**

Despite a systematic search strategy it is possible that some studies may not have been identified. It was not possible due to the differences in study design to conduct any statistical analysis. Also, although the eligible studies contained older people, they were not solely focused on older people and did not break down the results by age groups.

### **Conclusion**

The studies reviewed focused on specific long term conditions or co-morbidity rather than the increasing challenge for the older person of living with multi-morbidity. Studies that build on integrating current nurse led telephone services in Primary care rather than developing separate services need further development and evaluation. Importantly, this review highlights the lack of research examining how the older person views telephone communication and management, in particular Primary Health Care nurse-patient telephone communication and how the older person can be involved in improving nurse-patient telephone services that meet their needs.

More research needs to be conducted in the area of telephone communication for older people with LTCs, as this type of health care delivery may be essential in coping with the growing population of older people, with multi morbidity. The more accessible health care communication via telephone may provide the older person the support they need to manage their health conditions, but also remain living independently in their own homes.

**Declaration of Conflicting Interests:** The authors declare that there is no conflict of interest.

### **Contributions**

Study design: DR, SW, MG; data collection and analysis: DR, SW and manuscript preparation: DR, SW, MG.

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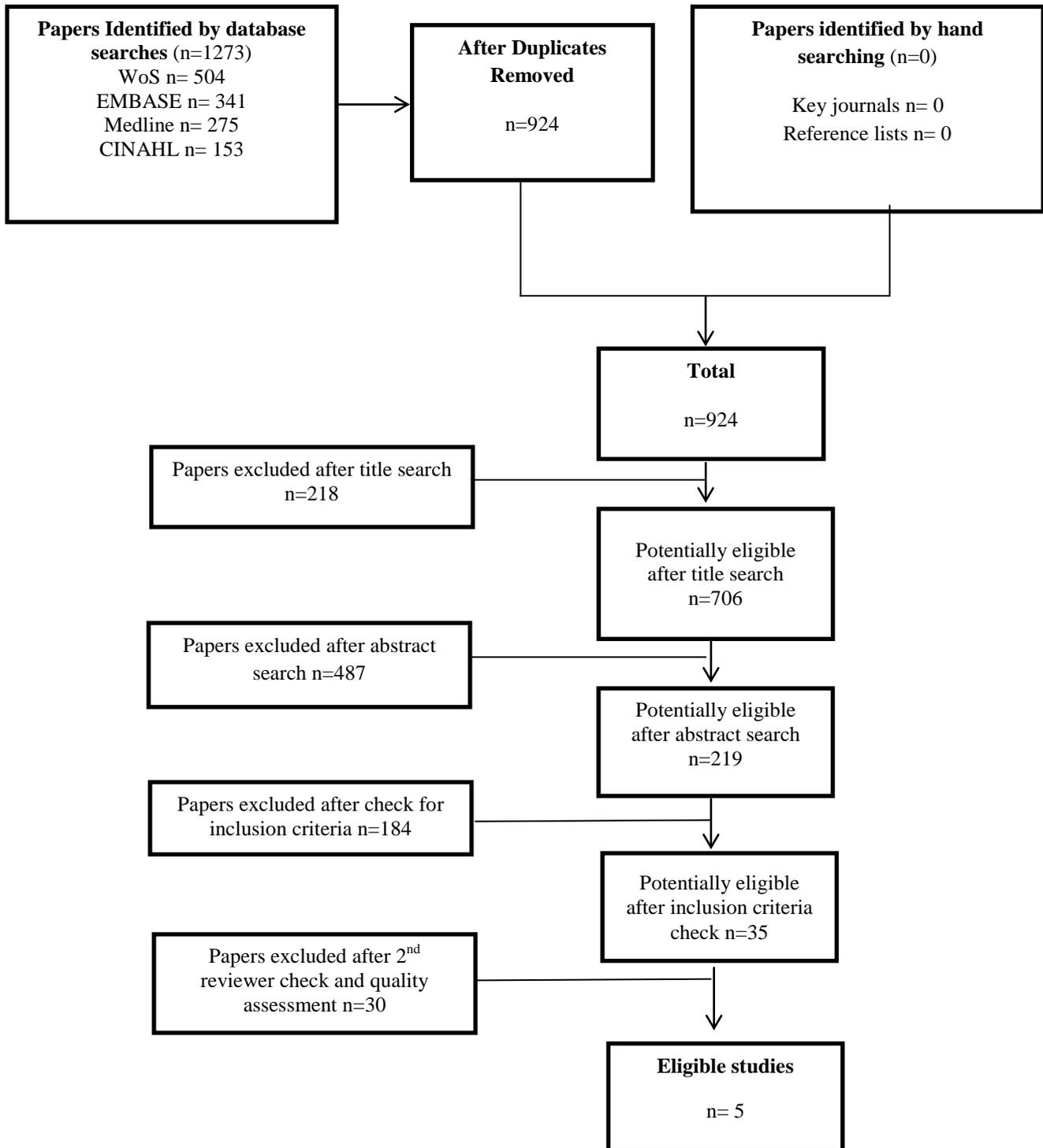
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Table 1. Summary of Papers

| Author                 | Purpose                                                                                                                                                                                                                                                                      | Study Design | Setting and Sample                                                                                                                                                                                     | Summary of results (relating to telephone comm)                                                                                                                                                     | Quality assessment                                                                     |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Mons et al (2013)      | to investigate whether a patient-centred intervention comprising monthly supportive telephone-based counselling sessions by practice nurses in a general practice setting improves diabetes-related medical and psycho-social outcomes above usual care in diabetes patients | Quantitative | <b>Country:</b> Germany<br><b>Setting:</b> general practices<br><b>Sample Size:</b> 204<br><b>Age range:</b> mean IV group = 68, control = 67                                                          | - no significant difference in HbA1c between IV and control- both decreased<br>- however there were significant differences for IV group in HRQoL and transiently for blood pressure and depression | 26/27<br>-                                                                             |
| Wakefield et al (2008) | To look at the differences in communication profiles between telephone and videophone interactions and whether these profiles change after time.                                                                                                                             | Quantitative | <b>Country:</b> USA<br><b>Setting:</b> data drawn from a larger RCT evaluating telehealth home care for older veterans with heart failure<br><b>Sample Size:</b> 28<br><b>Age range:</b> mean age = 70 | -There were no significant differences in patient satisfaction between telephone and videophone.<br>- No significant difference in communication profiles over time.                                | 25/27<br>- not clear about confidentiality<br>- mainly Caucasian sample                |
| Walters et al (2012a)  | to investigate health behaviour changes adopted by people with moderate or severe COPD during a RCT of telephone delivered health mentoring to support self-management in primary care                                                                                       | Qualitative  | <b>Country:</b> Australia<br><b>Setting:</b> patients from 31 general practices<br><b>Sample Size:</b> 44<br><b>Age range:</b> mean age = 65.2                                                         | - telephone delivery was highly acceptable and enabled good rapport- the programme helped improve the targeted health behaviours- physical activity and smoking cessation                           | 24/27<br>- methods section a bit confusing<br>- not much written about ethics and bias |

|                         |                                                                                                                                                       |               |                                                                                                                                                                                   |                                                                                                                                                                                                                                                                        |                                              |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Walters et al (2012b)   | to look at the barriers and enablers to practice nurses providing health mentoring to patients with COPD                                              | Mixed methods | <b>Country:</b> Australia<br><b>Setting:</b> nurses from general practices interested in health mentoring<br><b>Sample Size:</b> 5<br><b>Age range:</b> 36-60                     | - the nurses did not express reservations on the effectiveness of telephone support, but found that the time for scheduled time calls was frequently supplanted or interrupted by other tasks. Phone calls were given a lower priority than face-to-face consultations | 25/27<br>- aims not very clear               |
| Weinberger et al (1995) | to examine the impact of a nurse-coordinated intervention delivered by phone to patients with NIDDM between office visits to a primary care physician | Quantitative  | <b>Country:</b> USA<br><b>Setting:</b> General medical clinic of the Durham Dept of Veterans Affairs Medical Center<br><b>Sample Size:</b> 275<br><b>Age range:</b> mean age = 64 | - Glycaemic control was better in intervention patients but there was no significant difference in HRQoL or diabetes related symptoms.                                                                                                                                 | 25/27<br>- participants only from one center |



**Figure 1.** PRISMA Flowchart of literature search

