



Quality of residential care for older people: does education for healthcare assistants make a difference?

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Abstract

Aim To determine the impact of a healthcare assistant education programme on the quality of care for older people living in a residential home in Auckland, New Zealand.

Method A pre- and post-intervention evaluation study was undertaken within a residential home for older people. Quality of care was established by two periods of non-participant time-sampling observation of residents, separated by a programme of 10 interactive teaching sessions for healthcare assistants. Informed consent was gained from all observed residents and staff.

Results Using the Quality Assessment Project (QAP) quality measure,¹ the non-participant time-sampling observation data identified a 12.5% increase in resident care that was considered appropriate and adequate (chi-squared=12.05)—and an 11.53% decrease in resident care that was considered inappropriate and inadequate (chi-squared=11.43). The intermediate grades did not alter significantly. Residents with low functional activity scores (Barthel Index) received better care after the education intervention (chi-squared=32.99), as did residents with moderate cognitive impairment (Abbreviated Mental Test Score [AMTS]<8/10).

Conclusion Healthcare assistant education can positively impact on the quality of care given to older people in residential care.

Currently it is estimated that 28,000 adults over the age of 65 years are in residential care in New Zealand.¹ In residential care, older people are primarily cared for by healthcare assistants (nurse aides, nurse assistants, caregivers)—less than 25% of whom have vocational qualifications,³ thus confirming the belief of Foner⁴ that healthcare assistants are essentially untrained personnel reliant on the employer to provide training and professional supervision.

Healthcare assistants work without the obligation imposed by registration or enrolment, without a professional code of ethics, and without professional codes of practice enforced in courts of law.⁵ It is also a low-income workforce, and a significant number in the Auckland region have English as a second language.³

Ministry of Health contracts allow everyday supervision of healthcare assistants to be provided by a licensee who may not be a health professional.⁶ The mandatory employment of a registered nurse for at least 8 hours a week does not guarantee that the healthcare assistants will have access to professional guidance and advice. Older people are in long-term residential care because they are increasingly dependent on others to meet basic needs, and often have a multisystem reduction in physiological capacity that makes them uniquely vulnerable to external stressors.⁷ Quality of care is largely dependent on healthcare assistants, as they provide the majority of care.⁸

Most healthcare assistants learn to care for these older people ‘on the job’ and develop their skills and knowledge from experience and observation of other healthcare assistants. To assist in the provision of competent and compassionate care for a very vulnerable group of older people, ample opportunity exists to provide educational programmes that assist healthcare assistants in obtaining necessary knowledge and skills. It can be disputed, however, that healthcare assistant education by itself is sufficient to improve the quality of care for older people in residential care.^{9,10} This study, therefore, evaluates an educational programme for healthcare assistants.

Methods

Design—The impact of an educational programme for healthcare assistants was established by assessing the quality of care before and after the education programme implementation.

Study population—All residents and staff in one medium level dependency rest home in the Auckland area participated in the project. Residents in a rest home are at a variable level of dependency, invariably needing assistance with instrumental activities of daily living and some personal activities of daily living.

Written consent was obtained from all residents, all healthcare assistants, and other staff in the home. Ethics approval for this project was gained from the Auckland Ethics Committee.

Demographic data were obtained from the healthcare assistants and residents. The reduced item Barthel Index (BI)¹¹ and the Abbreviated Mental Test Score (AMTS)¹² were completed on each resident.

Quality assessment—Non-participant time-sampling observation was used for the data collection of the quality of care provided by healthcare assistants to residents. An independent gerontology nurse assessor observed six residents (and their care) at a time over 4-hour time periods. The assessor rated the care given to each resident as either *appropriate and adequate*; *appropriate and inadequate*; *not appropriate but adequate*; or *inappropriate and inadequate* using the Quality Assessment Project (QAP) scoring system developed by Norman and Redfern.¹ Numbers of each type of care were totalled and expressed as a percentage of total care observed.

Figure 1. The Quality Assessment Project (QAP) scoring system

Appropriate	
4	3
Adequate	Inadequate
2	1
Inappropriate	

Cell 1 is inappropriate and inadequate care—e.g. hot fluids left for a resident out of reach, the fluids slowly grow cold, and then removed with out the resident having drunk anything. Cell 2 is inappropriate and adequate care, Cell 3 is appropriate and inadequate care, and Cell 4 is appropriate and adequate care (e.g. a resident was served a hot meal, the healthcare assistant cut up the food and helped the resident eat the food, and chatting to them throughout the meal

The observer also took contemporaneous longhand recordings to describe the activities being observed. This method of observation identified care that was given and also care that was omitted. Each activity was later coded as one of 11 activities of daily living. The observer interspersed the observations with periods of event-sampling¹³ that provided narrative examples of observed interactions with the

residents. This combination of methods was used at baseline and on completion of the educational programme.

Sample size—Thirty residents (in groups of six per session) were observed every 6 minutes for 1 minute over ten 4-hour periods. It was estimated that this would generate sufficient observations to detect a relevant change in the distribution of scores observed before and after the intervention period (alpha 80%, $p < 0.05$).

The educational programme—The content of the teaching sessions was based on the Activities of Daily Living (ADLs)¹⁴ for residents, but was significantly influenced by the wishes of the healthcare assistants to know more about the everyday challenges faced by the residents in their care.

Case studies of residents were used to enable healthcare assistants to relate their knowledge of the resident to the explanation of the particular needs of that resident. Experiential teaching techniques enabled the healthcare assistants to experience (in some degree) the difficulties that frail residents faced, and to identify the care practices that could be used to ameliorate those difficulties.¹⁵

Visual tools such as photographs of various situations¹⁶ and story telling¹⁷ became the bases for discussion. The emphasis was on doing, experiencing, discussing, and team problem-solving—rather than didactic teaching. The healthcare assistant programme was delivered in ten 1-hour sessions. Focus groups were used to inform the development of the education sessions.

The topics for each session were:

- The grief, loss, and adaptation an older person may experience when entering residential care.
- Keeping a safe environment for residents and staff, including infection control.
- Helping a person to recover independence after a cerebrovascular accident (CVA).
- Caring for a person who has a dementia.
- Working with a person who has difficulty breathing.
- Eating and drinking. The social activity of the day.
- Keep my dignity and independence—Helping a resident manage continence, washing, and dressing.
- Caring for a person with compromised mobility—A resident who had Parkinson's disease.
- Hearing disability—What are you saying?
- Falls and injury prevention—Summary of course.

A strict sequence was observed to ensure that each part of the study was discrete and completed before the next phase started.

The sequence of the course was:

- Non-participant time-sampling observation of 39 residents over 1 week (pre-test),
- First focus group with healthcare assistants,
- Education programme of ten 1-hour teaching sessions over 5 weeks, followed by further observation, and the
- Study concluded with a second focus group to gather participant feedback about the education programme.

Analysis—The distribution of pre-education programme QAP scores was described and then compared with the post-programme scores distribution using the chi-squared test. QAPs were also correlated with the BI and AMTS to identify characteristics that may influence the quality of care

Results

All healthcare assistants, exclusive of the night staff and 39 of 41 residents participated in the study. The profiles of the healthcare assistants are shown in Table 1, and that of the residents in Table 2.

Table 1. Demographic characteristics of the 15 healthcare assistants who participated in the study

Age	Number
25–35 years	4
36–55 years	11
Female	15
Have dependent children at home	6
Years worked in this facility	
1–3 years	6
4–7 years	9
Vocational training	
Training in health-related work	3
Formal healthcare assistant training	3
Number of hours employed per week	
35–40 hours	4
15–34 hours	11
Ethnicity	
New Zealand European	6
New Zealand Maori	2
Pacific Islands	5
Philippines	1
British	1
English is my second language	6
Employment	
Primary employment	9
Worked as adjunct to another job	6
Worked extra shifts as required	4

The 15 healthcare assistant staff made up 7.2 full-time equivalent (FTE) positions. All of them were invited to join the programme of 10 teaching sessions but only the four full-time staff members consistently attended the 10 sessions. Two of the remaining staff members attended two sessions only. Two of the attendees worked as team leaders. All healthcare assistants attended the two focus groups.

Table 2. Demographic profile of the 39 residents who participated in the study

Characteristics	Male=9.2% (n=4)	Female=90.78% (n=35)
Place of birth		
New Zealand	2	24
England	2	9
Falkland Islands	0	1
Europe	0	1
Age range (years)	68–98	80–99
Support needs level		
Low dependency	2	4
Medium dependency	1	26
High dependency	1	5
First language	4=English	34=English / 1=Dutch
Marital status		
Widowed	3	33
Single	1	2
Barthel Index / Mean	12/20	15/20
AMTS / Mean	8.33/10	7.79/10
	1 man was admitted for short-term care	3 women died and 1 woman was transferred to a private hospital

AMTS=Abbreviated Mental Test Score.

QAP scores before and after the education programme are shown in Table 3.

Appropriate and adequate care observed after the educational programme was more frequent than before (chi-squared=11.426, $p=0.001$). Inadequate and inappropriate care was less frequent after the intervention (chi-squared=12.05, $p=0.0005$). (See Table 3.)

Table 3. Changes in quality scores before (Pre) and after (Post) an educational programme

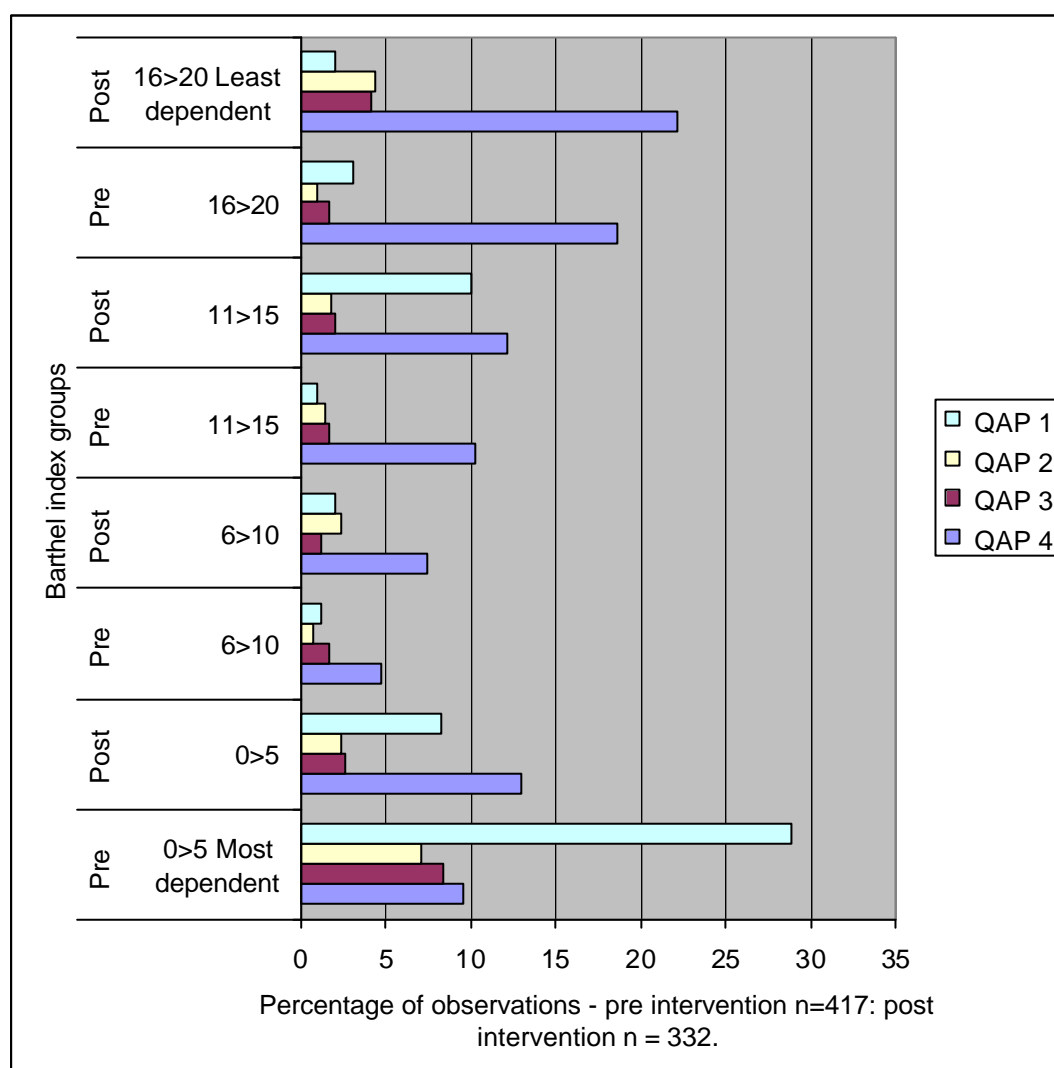
Period	Quality Assessment Project (QAP) Scores	Number of observations (Pre=417; Post=332)	Chi-squared value	P value
Pre Post	QAP 1 (inadequate and inappropriate care)	142/417 76/332	11.43	0.0007
Pre Post	QAP 2 (inappropriate and adequate care)	36/417 37/332	1.26	0.3
Pre Post	QAP 3 (appropriate and inadequate care.)	56/417 34/332	1.85	0.2
Pre Post	QAP 4 (appropriate and adequate care)	185/417 191/332	12.05	0.0005

QAP1=inadequate and inappropriate, QAP2=inappropriate and adequate, QAP3=appropriate and inadequate, QAP4=appropriate and adequate.

Subgroup analyses by disability and cognitive level—The study also sought to examine whether or not the functional dependency of the resident influenced the care that they received. Those with a BI score below 5/20 received 21% improvement in

the incidence of appropriate and adequate care after the education programme (chi-squared=32.99, $p \leq 0.001$). A 20% reduction in inadequate and inappropriate care for this group of residents was also observed. This indicated that the most functionally dependent residents received the greatest improvement in quality of care.

Figure 2. Reduced-item Barthel Index (BI) assessment of residents related to their Quality Assessment Project (QAP) scores

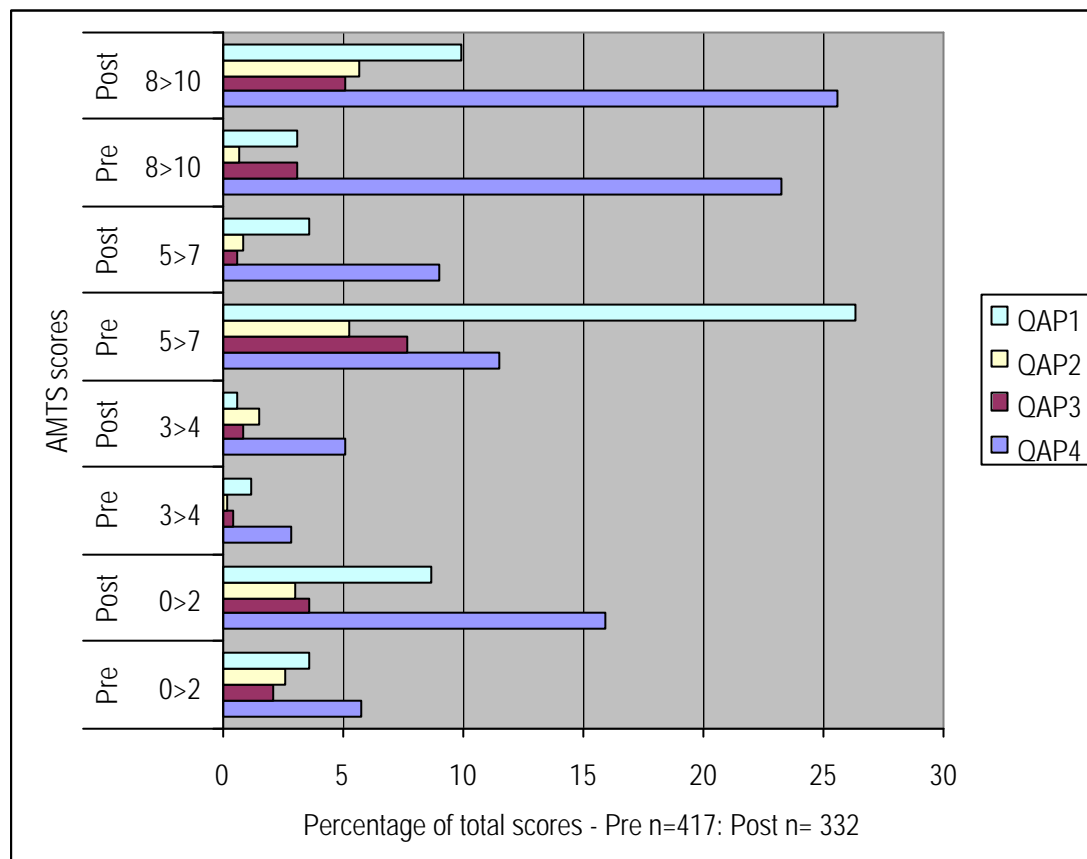


QAP1=inadequate and inappropriate, QAP2=inappropriate and adequate, QAP3=appropriate and inadequate, QAP4=appropriate and adequate; Pre=before education programme (intervention), Post=after education programme (intervention).

The other resident activities that showed significant improvement in quality of care were those of the residents who were scored as the most independent (chi-squared=10.198, $p=0.017$). For residents in the other Barthel groups, there was minimal change from pre- to post-intervention.

A previous study suggested that healthcare staff are much more likely to interact with residents who are deemed to be only moderately confused.¹⁸ To test this hypothesis, the resident AMTS scores for the testing of cognitive function were correlated with, the QAP scores before and after the education programme. Although there is no recognised consensus for the interpretation of the scores, it is generally believed that a score of less than 8 out of 10 suggests significant cognitive impairment.¹²

Figure.3. Abbreviated Mental Test Scores (AMTS) of residents related to Quality Assessment Project (QAP) scores



QAP1=inadequate and inappropriate, QAP2=inappropriate and adequate, QAP3=appropriate and inadequate, QAP4=appropriate and adequate.

Figure 3 shows a non-statistically significant trend for those residents with an AMTS score of two and under, towards an improvement in appropriate and adequate care, and a five percent increase in inappropriate and inadequate care (chi-squared=3.712, $p \geq 3.5$). For those residents with an AMTS of 5–7 there was a 22.75% decrease in those activities assessed as inappropriate and inadequate in the post intervention observations compared to the pre intervention observations (chi-squared=31.42, $p \leq 0.001$). In the group of residents most cognitively able, (AMTS 8–10), there was an increase in inappropriate and inadequate care scores (chi-squared=19.047, $p \leq 0.001$).

Resident interactions with staff—Resident interactions with healthcare assistant comprised the majority of staff-resident interactions. Registered and enrolled nursing staff interactions with residents were rare.

Discussion

Following completion of the education programme, there was significant increase in the proportion of care that was judged appropriate and adequate provided by healthcare assistants to residents than before (chi-squared=11.426, $p=0.001$). There was similarly a decrease in inappropriate and inadequate care after the programme (chi-squared=12.05, $p=0.0005$).

Ovreteveit¹⁹ defined quality as a service that gives people what they need as well as what they want, and to do so at the lowest possible cost. Safe, appropriate, intelligent and individualised care is possible in residential care facilities for older people with ongoing staff education and support. Such care can bring much comfort to older people in the latter years of their lives and to their families. Other studies that have evaluated programmes in residential care have also shown some impact on outcomes.^{20,21} These programmes were specifically designed to alter particular facets of care.

The fact that more dependent residents received the most change in care scores was interesting, as high resident dependency is believed to be negatively correlated with the quality of care.²² This shows that, even in the most difficult situations, there is potential for improved care.

In this study there was little input into resident care from the registered nursing staff. The paucity of qualified nursing staff interactions with the residents was surprising and not totally explained by the Hawthorne effect of behaviour changing when being observed. Most of the nurses' time seemed to be absorbed by talking with family, writing reports, working with the visiting medical officer, and dispensing medications. The presence of the observer did not appear to obviously influence the quality of care provided by the healthcare assistants, although this was difficult to quantify.

There were obvious limitations to this study. There was a small sample size of both residents and healthcare assistants. Two methods were used (i.e. non-participant time-sampling was interspersed with event sampling) but the observer used the mix in both pre- and post-periods of observation. There was a lack of consistency on the observation of the residents' activities. For instance, some residents who were observed with great frequency in the first observational period were not observed with the same frequency in the second period.

Not all the consenting residents were observed; only 82% being observed (not the 95% that was sought). The difficulties that the observer experienced were in part due to the long periods of resident inactivity. Another difficulty was that the residents were relatively mobile, while the observer (by necessity) remained relatively immobile.

The assessor was also not blinded, as she knew that there had been a programme in place in the rest home. Nevertheless valuable information was gained through the observation about the quality of residents' care. The contemporaneous long-hand

recording supporting the quality scoring, thus provided valuable information about the care that the residents actually received.

The attendees at the 10 teaching sessions were self-selected and very enthusiastic. All the education sessions related in some way to the people in the rest home. The teaching was experiential and highly interactive rather than didactic. Perhaps the key to improving quality of care is to target healthcare assistants who have the will and aptitude to benefit from the further education recognised by the New Zealand Qualifications Authority, and then enable them to work as team leaders and resource people, reflecting their better education and responsibilities in a graded pay structure.

It is not clear which part of the intervention was the most effective. Whilst it is likely that the staff delivered more appropriate care as a result of the increased understanding of gerontological issues through the education, it is also possible that the presence of the observer was also an influence in itself. Perhaps as Sheridan¹⁰ suggests, the presence of a registered nurse observer on the floor was necessary to improve quality.

The teaching of the healthcare assistants improved the quality of care in the short term, but whether this improvement was sustained is not known. The quality of residential care has many facets. From the residents point of view the primary determinant of quality is considered to be staff attitude²³—not only what care is delivered but how it is delivered.

For healthcare assistants, the recognition by other staff and management that they are doing a valuable job well, and that they are valued as staff and individual, are considered recognition of their worth.⁵ From a management perspective, however, a financially viable residential care facility that continues to attract residents and maintain high occupancy rates are indicative of success.

Currently, two agencies provide caregiver education distance-learning packages, but this is a cost incurred either to the employer or to the healthcare assistant. Similarly, some institutions provide healthcare assistant training at a cost to the learner.

Hence there is no dedicated government funding for the education of healthcare assistants who work in residential care, but there is a requirement that all healthcare assistants who work in dementia care have appropriate training.

Conclusion

This study showed that quality of care, as judged by an expert gerontological nurse using standardised observational techniques, was improved after an educational programme for healthcare assistants. This is one of the few healthcare assistants programmes formally evaluated to show such improvements in quality of care. Its findings show that there is potential to improve care in residential care, and healthcare assistant education programmes need to be disseminated throughout New Zealand. The effectiveness of the programmes currently in place also need to be evaluated.

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