LUND UNIVERSITY
Faculty of Medicine

Master's Programme in Public Health

The self-rated quality of care in relation to professional competence and national guidelines and policies

A study among Finnish elderly care workers

2017

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Abstract

Background: In Finland, the number of elderly increases. The government's policies aim to decrease institutionalized care and increase the proportion of home care for the elderly, and further, control the costs. As a worker in elderly care, several professional skills are required to be able to work with multimorbid elderly who have several medications.

Aim: To find out whether worker's experience of his/her own professional competence and addressing the national policies and guidelines at workplace affect the self-rated quality of care provided and whether there are differences between different professional groups.

Data and methods: An electronic survey for units that are involved in elderly services in Finland (N=180). Total number of respondent was 2103, including different professions. One-way ANOVA and Chi square test were used for initial analyses and analysis of variance was used for examining which variables were associated with quality of care provided in the work unit.

Results: The quality was rated the worst in home care. The respondents felt most competent in enhancing rehabilitation and they rated need for further education in palliative/end of life care, highest. Self-rated quality of care was statistically significantly associated with: supporting the self-determination of a person with memory disorder, palliative care variables, addressing the act for elderly care, quality recommendations for elderly care and national memory policy. Three background variables; job title, work unit and age, were also found to be significantly associated with quality of care.

Conclusion: The variance analyses models showed that higher self-rated quality of care was associated with rating competence higher in supporting the self-determination of a person with memory disorders, addressing the act for elderly care and national memory policy. Moreover, differences were found between the different professional groups in the study. Even if, only one of the competence variables was associated with self-rated quality, workers in health care should be able to update their competence in other areas, as well. In the future, studies could focus on investigating the relationships between perceived competence and addressing the national guidelines and policies.

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1. Introduction

Since 2012 in Finland, there has been an aim to decrease the number of places in institutionalized care and increase the number of elderly receiving home-care (Ministry of Social Affairs and Health, 2012). The present Finnish government introduced their five strategic programs for the years 2016-2019. Each of these programs include their specific key projects, 26 of them in total, one of them called 'Home care for older people will be developed and informal care enhanced in all age groups'. The aim of this key project is to significantly increase the number of elderly receiving home care either with their family caregiver or with a help from a health care professional. Furthermore, the aim is to have the elderly living in their own homes for as long as possible and to develop and reform the service structure of elderly care. The need for institutionalized care is also aimed to be minimized. The length of stay in a hospital should be even shorter and there is a need to develop the period appearing right after discharge. Moreover, rehabilitation in several different forms is more integrated into home care services as well as palliative care (Prime Minister's Office, 2016 and Ministry of Social Affairs and Health, 2016).

1.1 Policies behind elderly care

The key project stems from The Act on Supporting the Functional Capacity of the Ageing Population and on Social and Health Care Services for elderly people (980/2012) that came to force on the 1st of July 2013. The act states that the municipality must provide the services for the elderly, the emphasis being on living at home and rehabilitation. Furthermore, the municipality needs to assess the need of an elderly for the services and, if needed, arrange a place to live in a sheltered housing or in a similar assisted living facility. The act also underlines the quality of services and that the personnel working within the elderly services need to have for example sufficient educational qualities (Act on Supporting the Functional Capacity of the Older Population and on Social and Health Care Services for Older Persons, 2012). However, there are other national level guidelines and policies that guide the services and their provision for the elderly. In 2012, a national memory policy was introduced for years 2012-2020. The aim of this policy was also to control the rising costs that the increasing amount of elderly with memory disorders would bring and to make the service chain for a person with memory disorder more unified. Further, the memory policy emphasizes competence on palliative care and the significance of rehabilitation (Ministry of Social Affairs and Health, 2012).

The health care is mainly publicly funded in Finland, about 75% of the expenditure comes from public funds and the amount spend on health care is equivalent to 9.5% of GDP (Matveinen & Knape, 2016). Services for the elderly, is and will be, a major public health concern. The number of elderly in Finland has increased notably during the last 50 years (Findicator, 2016). The trend has been the same in other OECD (The Organisation for Economic Co-operation and Development) countries as well. In 2014 the percentage of people aged 65 and over in Finland was 19,4%, this being the seventh highest percentage in The European Union (OECD, 2016). Statistics Finland (2015) predicted in their report that this percentage will rise to 26% in 2030 and to 29% in 2060. Considering the high percentage of elderly in the future, a need for human resources might increase, since many of the elderly living in sheltered housing require assistance of one or more workers in their activities of daily living (Noro, et al., 2014). In addition, a report from Väyrynen and Kuronen (2017) indicated that 29,1% of those receiving regular home and being classified as 'almost continuous need for care' had 90 or more home care visits per month. National development program for informal care tries to tackle the resource issue. If the potential of informal carers, like family members, is developed, the need for the staff working in elderly care could be controlled better, along with the expenses (Ministry of Social Affairs and Health, 2014). Furthermore, Kehusmaa, et al. (2013) found in their study that elderly receiving care from an informal carer had notably lower care expenses compared to those who only received formal care.

In Finland, different living services for the elderly are divided into institutionalized care and non-institutionalized care, these both are mainly long-term care but can also include short-term care. Short-term care can be offered for example during a family carer's vacation, or it could be a temporary need for home care. Institutionalized care consists residential and nursing homes and inpatient wards in hospitals or health centers. Non-institutionalized care consists home care, sheltered housing with part-time or 24-hour assistance (Väyrynen and Kuronen, 2015). The costs of long-term care for elderly and people with intellectual disabilities formed 14,5% of all the health care spending in 2014. This figure includes both institutionalized and non-institutionalized care. The amount spend on elderly care has been increasing since 2000 even though the spending on institutionalized care has decreased (Matveinen & Knape, 2016).

In 2015, the most common form of living service among people 75 years and older, was home care, which 56 507 or 11,8% of the people received. The second was sheltered housing with 24-hour assistance with 7,1%. The least common was inpatient ward with 0,4% or 1949 people (Väyrynen and Kuronen, 2017). The Ministry of Social Affairs and Health together with The Association of Finnish Local and Regional Authorities (2013) has set a target for the elderly (75 years and older) receiving home care to be 13-14% by the 2017. Furthermore, the target for elderly living in institutions, including nursing and residential homes and inpatient wards, is 2-3%.

1.2 Complexity in elderly care

When the amount of elderly and the proportion of people who are older than 80 years increases, so does the clinical complexity. Multimorbidity, or having 2 or more concurrent diseases, was seen to be very common among elderly people, prevalence ranging from 55 to 98% in six different high-income countries (Marengoni, et al. 2011). A large, European wide, study showed similar results. Many of the elderly nursing home residents had several different medical conditions like urinary incontinence, pain and impaired cognition (Onder et al. 2012). Data from the National Institute for Health and Welfare indicates that more than 50% of the elderly residents in nursing homes, inpatient wards in hospitals or health centers and in a sheltered housing with 24-hour assistance, had memory disorders (Sotkanet.fi, 2017). Furthermore, a report from Väyrynen and Kuronen (2017) indicated that more than 50% of those 65 years and older who received regular home care in Finland were classified as 'Recurrent need for care' and more than 15% as 'Almost continuous need for care', when assessing their need for care.

Moreover, the elderly tend to use several different medications. This phenomenon called polypharmacy is very prevalent among the elderly. According to a review article from Hajjar, et al. (2007) there is not a specific definition for polypharmacy, different studies have used different number of medications per day, varying from two to nine. Other sources have used 5 or more different prescribed drugs per day (Rushabh & Akanskha, 2014 and Thorolfsdottir, et al. 2012). A study, that included acute care hospitals from all Scandinavian countries, demonstrated that an elderly person admitted to acute care hospital had on average six different medications and 47% of the patients had 5 to 9 different medications (Thorolfsdottir et al. 2012).

1.3 Professional competence

Regarding the complexity in the care for elderly, the workers within elderly care need to possess knowledge of various different conditions. In the light of the previous studies, it seems that workers in elderly care would like to gain more competence. From, et al. (2013) studied competence and knowledge of assistant and registered nurses who worked with elderly and found that there was a need for complementary education among both groups, even more among registered nurses. Moreover, a study from Karlsted et al. (2015) reported that nurses who work within elderly care have the need for further education especially in areas of drugs and older people, palliative and dementia care but also in rehabilitation and function disability.

Perceiving own professional competence better, was seen to be associated with job satisfaction. Those nurse assistants who perceived their competence excellent or good in dementia care were more satisfied with their job (Han et al. 2014). Further, when comparing carers with and without formal education, those with formal education had higher values in factors measuring quality of care. They also perceived their workload smaller (Engström et al. 2011). Moreover, professional competence seems to play an important role in quality of care and patient safety. Aiken et al. (2014) examined how the education level of nurses affects the mortality of hospital patients in different European countries, Finland included, and found that there was a decrease in mortality among patients when there was an increase in proportion of nurses with bachelor's degree. Moreover, educational level was seen to affect the self-assessed professional competence. Registered nurses were found to have better competence than assistant nurses and further, assistant nurses had better competence than assistants who had no formal health care education. The authors stated, that there were, however, several areas where competence should be improved in order to secure safe care for the elderly in community health care (Bing-Jonsson et al. 2016). In addition, knowledge of the different guidelines and policies is important, and it could be said that it is linked to competence. To see the 'bigger picture' of a health care field, it is worthwhile to understand where the different regulations arise and to know the different guidelines and policies that influence the way the care should be planned and provided.

A complexity of elderly patients' care requires competence in several different areas from the staff that is working within elderly care. Due to the increasing amount of elderly, sufficient

amount of competent health care professionals is required to be able to secure appropriate and equal treatment for all, making this a public health concern. Therefore, the aim of this thesis is to find out whether worker's experience of his/her own professional competence in eight different areas and addressing the national policies and guidelines at workplace affect the self-rated quality of care provided. And furthermore, to see whether there are differences between different professional groups.

The research questions for the thesis are:

1. Is a high self-assessment of a worker's own professional competence associated with higher self-rated quality of care provided?
2. Is addressing national guidelines and policies associated with higher self-rated quality of care provided?
3. Is there a difference between different professional groups?

2. Methods

2.1 Data

The data used in the thesis is from a survey in a study called 'Worker well-being and effectiveness in elderly care structural changes'. This study is currently in progress in the National Institute for Health and Welfare (THL), in Helsinki, Finland. The units to whom the surveys were sent to, had been involved in a previous study regarding the Act on Supporting the Functional Capacity of the Older Population and on Social and Health Care Services for Older Persons. The study included all the units that are involved in elderly services in Finland. An electronic survey was sent out between December 2015 and January 2016 to units that had agreed to take part in the study, 180 units in total. The response rate was 36%. The survey was directed to the staff and supervisors working in different elderly care units.

The survey contained questions regarding physical and mental stress factors and symptoms, leadership, quality, changes in the workplace and wellbeing at work, among other things. From the survey, 16 questions were used in the analysis (see questions in annex). In addition, questions about the background of the respondents were used. These were the job title and in which unit they worked at. A new variable for classifying the workers based on their title and whether they

had subordinates (question 1.12), was created. This was done in order to include the higher-level supervisors as well and classify the workers better based on their educational background. The workers were classified as 1. highest level supervisor whose subordinates had subordinates, 2. head nurses who had subordinates, 3. nurses/public health nurses, physiotherapists and others with bachelor's degree, 4. assistant nurses and 5. care assistants/ward domestics. Some of the respondents' titles had to be manually corrected to include them in one of the groups. Furthermore, 51 of the respondents (2,7%) remained in a group 0, since their profession was not specified according to the formerly mentioned groups. This group was filtered out from the analyses.

The questions considering the self-assessed professional competence where of eight different areas: pain treatment, supporting the self-determination of a person with memory disorders, enhancing rehabilitation, multidimensional assessment of function, nutrition, falls prevention, palliative/end of life care and pharmacological treatment (questions 8.11-18). These questions were assessed on a three-item scale as good (1), average (2) and need for further education (3). Furthermore, a sum variable regarding competence was computed and used in the analysis. This variable was created from the means of the different areas of competence.

Questions on whether five different national guidelines and policies had been addressed in the workplace were either a yes (1) or no (0) answer (questions 8.19-23). The policies and guidelines were The Act on Supporting the Functional Capacity of the Ageing Population and on Social and Health Care Services for elderly people ('The Act for Elderly Care'), quality recommendations for elderly care, national memory policy, national development program for informal care and Target Programme for the Prevention of Home and Leisure Accident Injuries.

In the survey, the quality of the care provided was assessed with eight different questions regarding, for example, the way how patients are treated, whether the patients receive help when they need it, cooperation with next-of-kins etc. The answers were 5 item Likert-scales. The variable for quality used in the thesis was assessed with a rating scale from 4, the worst, to 10, the best (question 8.1). This was sort of a summative question for the quality of care provided and it is a type of grade used in Finnish schools.

2.2 Statistical methods

The data was analyzed using SPSS version 24. The alpha level was set at $p<0.05$. Comparison of means in competence variables was analyzed using one-way ANOVA test and Bonferroni's Post Hoc test, to see the differences between the work unit and professional group means. Addressing national policies and guidelines were analyzed with crosstabulation and Chi-Square test. Furthermore, variance analysis was used for the final models to know whether self-assessed competence and addressing national policies and guidelines affected the self-rated quality. The dependent variable was chosen as quality in a scale 4 to 10. Independent variables were in the first model all the competence variables, eight in total. In the next model, same dependent variable remained and the independent ones were changed into addressing the national guidelines. The third model had all the variables that were significant (p-value was <0.05) and others were removed. After using the different variables together in the model, three background variables, job title, work unit and age, were included in the last model.

2.3 Ethical considerations

The ethical committee of THL approved the original study and the survey. The anonymity of the respondents was secured for example as a minimum requirement of six people per unit that needed to answer the survey in order to get the unit wise feedback. Further, no information of the respondents was given to the third party. The participants gave their consent to participate if they returned the survey, and this was stated in the survey.

3. Results

3.1 Sample characteristics

The total number of respondents was 2103 (table 1). The respondents were mainly assistant nurses (72%) and nurses or other professionals with bachelor's degree (15%) and 8,7% of the respondents reported to have subordinates (head nurses and highest level supervisors combined). The mean age of the respondents was 43,3 years, ranging from 19 to 75. Due to a low response rate from some of the work units, the smaller units were merged together. After merging the units together, five different types of work units remained. The most common was sheltered housing with 24-hour assistance where 47% (N=975) of the respondents worked, the second was home care with 21% (N=437). Other types of units were sheltered housing with part-time assistance

(N=235, 11%), nursing/residential home (N=287, 14%) and inpatient ward in a hospital or health center (N=142, 7%).

Table 1. Characteristics of random national sample of Finnish elderly care workers, according to type of housing and job title

Type of housing	N	Percentage of total sample size (%)	Mean for quality (4-10)[1]	Mean for competence (1-3)[2]
Sheltered housing with 24-hour assistance	975	47,0	8,24	1,50
Sheltered housing with part-time assistance	235	11,3	8,29	1,55
Nursing home	287	13,8	8,22	1,50
Inpatient ward	142	6,8	8,23	1,58
Home care	437	21,1	7,78*	1,57
Total	2076	100,0	8,15	1,53
Job title				
Non-specified title	56	2,7		
Highest level supervisors	22	1,0	8,67	1,40
Head nurses	162	7,7	8,45	1,45
Nurses and others with bachelor's degree	314	14,9	8,01	1,47
Assistant nurses	1499	71,3	8,13	1,53
Care assistant	50	2,4	8,39	2,02**
Total	2103	100,0	8,15	1,53

[1] 4= the worst, 10= the best

[2] Value closer to 1 is more desirable (1= good, 2= average, 3= need for further education)

*Significantly lower compared to other units (one-way ANOVA and Post Hoc test p=0.000)

** Significantly lower compared to other professional groups (one-way ANOVA and Post Hoc test p=0.000)

3.2 Quality

The mean of the grade for quality provided in the work unit among respondents was 8,15 on a scale 4 to 10, where 4 is the worst and 10 the best (table 1). Sheltered housing with part-time assistance rated the quality the highest, 8,29, whereas home care rated it the worst 7,78. This was significantly lower compared to the other units ($p<0.05$). The highest-level supervisors (those, whose subordinates had subordinates) rated the quality to be the best, 8,67 (N=21).

3.3 National policies and guidelines

Act on Supporting the Functional Capacity of the Ageing Population and on Social and Health Care Services for elderly people ('the act for elderly care') was addressed the most, at all work units and among the different professional groups (see table 2). Chi-Square test showed that there were statistically significant differences in percentages for 'Yes' and 'No' between the work units in three of the guidelines (p-value was <0.05). The act for Elderly Care was the least addressed in home care, and this was significantly lower than in sheltered housing with 24-hour (p=0.002) and part-time (p=0.018) assistance and nursing home (p=0.000), when using one-way ANOVA and Post Hoc test (table 2). National development program for informal care was addressed the least at workplaces, only 14% of the respondents reported that they had addressed the policy. Quality recommendations for elderly care were addressed in home care significantly less than in sheltered housing with 24-hour (p=0.000) and part-time (p=0.001) assistance and nursing home (p=0.000). Inpatient ward had also addressed this guideline significantly less than nursing home (p=0.020).

3.4 Professional competence

Professional competence measured with sum variable was assessed highest in sheltered housing with 24-hour assistance. The difference was only higher significantly when compared to home care (p<0.038). When looking at the different professional groups, the highest score for professional competence was given among the highest-level supervisors. This score seemed to follow the educational background, the higher the education was, the better the score was and vice versa. Though, this difference was statistically significant only between professional group 5, care assistants/ward domestics, compared all other professional groups (p=0.000).

Most competent the respondents felt in enhancing rehabilitation, in which 69% rated their skills to be good and the mean was 1,37 (the value closer to 1 is better, since 1=good). The respondents felt the least competent in multidimensional assessment of function (mean 1,78). The highest percentage on 'need for further education' was given to palliative/end of life care, where 22% of the respondents felt that they would need additional education.

Between work units, the most differences were found in palliative/end of life care. Here the difference in competence between home care and all other work units was found to be significantly lower (p=0.000). Furthermore, sheltered housing with part-time assistance rated the

competence in palliative care worse compared to nursing home (p=0,013). Moreover, inpatient wards rated their competence in supporting the self-determination of a person with memory disorder worse than other work units (p=0,000-0,048) and home care rated their competence lower compared to sheltered housing with 24-hour assistance (p=0.036).

In general, highest level supervisors assessed their competence to be the highest. Professional group 5 (care assistants/ward domestics) assessed their competence the lowest. However, the differences were statistically significant between professional group 5 and all the other professional groups in six out of eight areas of competence (p=0.048-0.000). The differences were not significant in nutrition except compared to assistant nurses (p=0.008) and in falls prevention when comparing to nurses (p=0.015) and assistant nurses (p=0.001). Falls prevention was the only area of competence in which assistant nurses rated their competence to be better than head nurses (p=0.007).

3.5 The analysis of variance

In the variance analysis two of the competence variables, supporting the self-determination of a person with memory disorders (F=4,406 and p=0,012) and palliative/end of life care (F=5,413 and p=0,005) were seen to be associated with the variance in quality (see table 3, model 1). In addition, three of the guidelines the Act for Elderly Care (F=10,894 and p=0,001), quality recommendations for elderly care (F=12,423 and p=0.000) and national memory policy (F=8,256 and p=0,004), were also associated with quality when they were tested in separate models (table 3, model 2) When testing all these five variables together in the third model, all the variables remained significant. In the final model, three background variables, job title, work unit and age, were added. These variables were all shown to be significantly associated with self-rated quality and they made palliative/end of life care and quality recommendation variables non-significant (p=0,263 and p=0,078, respectively) in the model. Furthermore, the R Squared values for the last model with three background variables was 0.145, indicating that when the three variables were added to the model, 14,5% of the variation in self-rated quality of care provided in this sample, could be explained with these variables.

4. Discussion

The aim of this thesis was to see whether higher self-assessment of own professional competence and addressing national guidelines and policies at workplace are associated with higher self-rated quality of care provided in the work unit. And further, to see whether there are differences between different professional groups. Only five out of 13 variables were seen to explain the variation in self-rated quality of care provided in the work unit in the variance models. Supporting the self-determination of a person with memory disorders, palliative/end of life care from the competence variables and the act for elderly care, quality recommendations for elderly care and memory policy, were found to be significant in the model. When job title, work unit and age variables were added, palliative/end of life care and quality recommendations for elderly care variables became non-significant.

Since the Act for Elderly Care and national memory policy emphasize the importance of rehabilitation, the analyses showed positive results. The participants felt the most competent in enhancing rehabilitation. However, assessing the different areas of function was rated the least competent area. This could have been due to the phrasing of the question in a way that, the participants might have had difficulties to understand what was meant with it. In addition, an interesting aspect regarding the areas of competence was, that the inpatient wards rated their competence in supporting a person with memory disorder the lowest. In Finland, patients in inpatient wards have usually several morbidities and data from SotkaNet (2017) indicated that in 2012, 56,1% of those patients had memory disorders. Concerns could be raised regarding the objectively assessed quality of care, if the competence is perceived low. A Finnish study regarding the care of elderly with dementia, found that nursing staff in a surgical ward experienced not being competent enough in managing elderly with memory disorders. In this study, the nurses also identified that their basic training was not enough, but they needed additional training to cope with demented elderly (Hynninen, et al. 2014). Moreover, a study that examined the quality of care from a patient's perspective in Finland found that patients in long-term care have less chance to influence the planning of their care, compared to patients receiving home care. And further, the results discovered that patients with memory disorders had even slightly lower chance to influence their care planning (Kehusmaa et al. 2016). In the future, when the amount of elderly, and memory disorders, will increase, the workers might need

additional knowledge regarding memory disorders and especially, how can they support the self-determination of a person having memory disorders to secure equal care for all. The results from the variance analysis also supported this finding. An interesting finding was also that home care had significantly higher competence in pharmacological treatment compared to some of the other work units. However, work in home care is more independent and many of the assistant nurses have the license to administer medicines. This could therefore explain why home care workers feel competent in this area compared to for example inpatient wards where most likely only nurses are the ones administering medicines. Even though, only one competence variable was seen to be strongly associated with higher self-rated quality, palliative/end of life care remained significant until the last model as well. Therefore, based on these analyses it could be stated that perceiving own professional competence higher in supporting the self-determination of a person with memory disorder was associated with higher self-rated quality of care. Moreover, competence in palliative/end of life care was shown to be significant when job title, work unit and age were not tested in the same model.

When looking at the differences between addressing the national guidelines and policies at workplace, home care stands out with least 'yes' answers. In home care units, The Act for Elderly Care, quality recommendations and national memory policy were the least addressed compared to other units. If the amount of staff is insufficient, it could explain why home care has not addressed the guidelines and policies as much as other work units have. To verify this, other variables, like the worker's perception of whether they have sufficient time to do their tasks or time for the patients, should have been included in the variance analysis model. However, the Act for Elderly Care, quality recommendations and national memory policy were seen to be significantly associated with self-rated quality. Thus, it could be determined that addressing these guidelines and policies was associated with higher self-rated quality of care provided in the work unit when testing the variables in a separate model. The Act for Elderly care and national memory policy were still significantly associated when testing in the same model with job title, work unit and age. Since the questions on national guidelines and policies were the last questions in the survey some workers might have answered without considering the answers or disregard the questions, and therefore this could have possible biased the result towards the null but in a small scale. In addition, addressing different national guidelines and policies might contribute to

a higher self-assessed professional competence if different questions regarding competence would have been used, like in a study from Gardulf, et al. (2013) where newly graduated nursing students did not feel competent in 'legislation in nursing'. Other studies have found an association between the perceived quality of care and assessment of worker's own professional skills, as well. Those who assessed their professional skills higher, had also a greater probability to assess the quality of care to be higher (Räikkönen et al. 2007). Though, this study did not use specific skills to measure the perceived competence, rather they used a 4-item measurement on whether client's needs were met and if the worker lived up to expectations of the unit and oneself. Therefore, the quality was examined from slightly different perspective.

Looking at the grade for quality of care given by home care, concerns could be raised. In the recent years, there has been an increase in the number of patients in home care, and the general mood has seen to be shifted to the perception of poorer quality of care. As an example, The Finnish Union of Practical Nurses stated in their report that 95% of the assistant nurses who worked in home care were concerned about the quality of care (SuPer, 2015). If the workers feel stressed and are not satisfied with their work in home care, this could have encouraged them to answer the survey with more negative attitude and affect the grade given to quality, perhaps even leading to a form of response bias.

Still, other things, such as, work environment and staffing level, might affect the grade of self-rated quality of care provided. Tervo-Heikkinen et al. (2009) and Lambrou et al. (2014) found in their studies that if the nurse-patient ratio was not experienced to be sufficient, then the quality of care was also rated to be worse, compared to higher nurse-patient ratios. This could possibly explain the poorer experienced quality in home care since work in home care might be more hectic and busy and the staffing might not be sufficient. In addition, Elovainio, et al. (2014) found in their study that job demand and job strain were seen to be associated with lower staffing levels among Finnish nurses who worked in elderly care. Furthermore, they found that higher perceived stress was associated with lower staffing levels. The feeling of having to hurry while working, might be an important reason behind the findings of this study and even though it was addressed in the survey, it was not addressed in the analyses of the thesis.

Regarding the professional competence, the results of this thesis were similar what Bing-Jonsson et al. (2016) found in their study; the higher the education, the better the perceived competence. When examining more the different areas of professional competence, the most differences between units were found in palliative/end of life care. This was the area where the participants felt the most need for further education and especially home care felt that their competence was 'average' instead of 'good'. This is an important issue, when thinking about the current and future state of the elderly services. When the elderly should live in their homes for as long as possible (Act on Supporting the Functional Capacity of the Older Population and on Social and Health Care Services for Older Persons 980/2012), a growing part of the elderly will also live at home until the end of their lives. The proportion of palliative and end of life care would then most likely increase in home care and workers in home care should be able to provide palliative care for those who need it. Other studies have also identified the need for additional education in this area of care. In a study from Törnquist et al. (2012), Swedish community nurses described the need for additional knowledge regarding palliative care when working independently in home care and further, they acknowledged the need of support from colleagues. Moreover, Karlsted et al. (2015) stated that registered nurses wanted to gain more competence in different areas of elderly care, palliative care among others. When considering the independence, and sometimes solitude, of home care work, the need for additional knowledge should not be disregarded. The fact of having to make rapid decisions independently is also a true issue when working in home care (Törnquist et al. 2012) and therefore, it would be important to provide education for the staff in the areas they do not feel competent in. Previous studies have also shown that nurses with more work experience rated their professional competence higher (Numminen, et al. 2013, Karlsted, et al. 2015). This is an important aspect to consider when more work force is required to work in elderly care since this work force might be younger and inexperienced. When considering the differences between different professional groups and to answer the third research question of the thesis, it could be stated that differences were found between different professional groups in competence and addressing different policies and guidelines, and further, job title was associated with variance in quality. In addition, a new task shift has been introduced a few years ago in health centers in Finland. Nurses with additional education have been licensed to prescribe drugs since the 1st of January, 2011 (Ministry of Social Affairs and Health, 2010). An implication of this could be that nurses, along with other professionals, need competence in

different areas, and due to a changing working environment in health care they need to be able to update and reinforce their competence.

4.1 Strengths and Limitations

Considering the strengths of the study the main one would be the sample size. With 2103 respondents, it might be possible to generalize the findings of the thesis to other units in elderly services in Finland, for example to the ones that did not participate to the study. This, however, should be done with caution. Furthermore, since the respondents were from private and public work units it allows to draw some conclusions considering both public and private service providers. However, the number of respondents from inpatient ward was only 142 which was notably lower than, for example, from home care. Therefore, the results may be generalized better to home care than inpatient ward. It could be stated though, that since the proportion of home care in the care for elderly is large, the survey's sample could be considered somewhat representative, even with the present response rate of 36%. Furthermore, the same could be stated considering the representativeness of the different professional groups.

An electronic survey might be either a strength or a limitation, it is very easy to fill out and it can be done, for example, meanwhile documenting patient related issues. On the other hand, it might be very easy to disregard, and therefore not to answer it. This could have been the case in this survey, since the workers might not have time to fill out surveys during their working hours and this might reflect to the low response rate. This might possibly leave out the opinions of 'regular workers'. Furthermore, the surveys were sent out at the end of the year during Christmas time which could also influence the response rate. However, it has been shown that the response rates of web based surveys are lower than other forms of surveys (Manfreda, et al. 2006) and that they have declined over the years (Anseel, et al. 2010). Therefore, the response rate when using web based survey might be expected to be rather low. When thinking about the questions on national guidelines and policies, one could argue whether they were all relevant for the work unit. Target Programme for the Prevention of Home and Leisure Accident Injuries might not be seen very relevant in institutionalized care units where majority of the patients are bed bound and live in institution. This could also explain the difference why it was more addressed in home care. Moreover, those assistant nurses who work in inpatient wards might not be licensed to administer medicines and therefore, rate their competence lower. When thinking from this viewpoint, it is

worthwhile to ask whether some of the competence questions were relevant in some work units. The same considers different professional groups. In the group number 5 (care assistants/ward domestics), there might be workers who do not have health care related education or do not participate care work and therefore rate their competence lower. Excluding this group from the analyses, might have given more truthful results. In addition, when examining the results regarding home care, it would have been relevant to include the questions on feeling of having to hurry or whether workers have sufficient time to do their tasks. Moreover, worker's experience of their job control could have been included in the model. Low job control has been shown to be associated with higher perceived stress, early retirement intentions and using more physical restraints among patients (Elovainio et al. 2001; 2005 and Pekkarinen, 2007). These analyses would have allowed a deeper understanding on, whether these are the main reasons for poorly perceived quality.

When considering statistical methods, linear regression analysis might have been an alternative to use with the competence variables to see whether higher competence is associated with higher quality. It would have allowed to estimate the degree of change in quality when competence changes, for example, from 1 to 2. This was not possible with the variance analysis. However, variance analysis allowed to assess the association of several variables on quality and how much of the variation could have been explained with these. The measurement for quality in the thesis was sort of a general measure, and it did not specify the areas which formed the quality. There might be several interpretations what is meant with this. To be able to examine the quality in a more specific and informative way, other questions regarding quality should have been used in the analyses. In addition, even if, there were statistically significant associations between the variables and self-rated quality, R Squared, adjusted R Squared and effect size values were not very large in any of the models, except in the final one.

5. Conclusions

The results of this thesis indicate that addressing national policies and guidelines and assessing one's own professional competence higher were seen to be associated with higher self-rated quality of care provided. However, even if the association was statistically significant among palliative care and supporting the self-determination of a person with memory disorder, the

results regarding other areas of professional competence should not be disregarded. Health care is a dynamic work environment where updating one's skills is necessary. This need for additional education regarding nurses' competence has been noted in previous studies, as well (Karlsted et al. 2015 and Törnquist et al. 2012). Especially, considering the persons with memory disorders (Hynninen et al. 2014). Furthermore, the guidelines and policies that guide the care and its planning should be addressed at work places. These might provide the workers understanding of the different procedures or standards. Considering the differences between different professional groups, the results showed that higher education was associated with better competence and that supervisors rated the quality the best, and further, job title was seen to be associated with quality. By providing additional training for workers in the areas where they do not feel competent, the quality, and perhaps other aspects, like job satisfaction, could be rated higher. Future studies in the field could include the clinical quality of care in home care and its relation to competence. Further, it could be interesting to investigate more deeply, the relationship between addressing the national guidelines and policies and how does it affect for example to the perception of worker's competence.

Table 1. The percentages of whether national guidelines/policies were addressed at work place by a random national sample of Finnish elderly care workers in different elderly care units in Finland.

	The Act for Elderly Care			Quality recommendations for elderly care			National memory policy			Target Programme for the Prevention of Home and Leisure Accidents Injuries			Development program for informal care		
	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total
1 Sheltered housing with 24-hour assistance	36,8 %	63,2 %	100,0 %	38,2 %	61,8 %	100,0 %	77,7 %	22,3 %	100,0 %	81,7 %	18,3 %	100,0 %	85,8 %	14,2 %	100,0 %
2 Sheltered housing with part-time assistance	34,3 %	65,7 %	100,0 %	40,4 %	59,6 %	100,0 %	80,7 %	19,3 %	100,0 %	84,2 %	15,8 %	100,0 %	87,3 %	12,7 %	100,0 %
3 Nursing home	28,4 %	71,6 %	100,0 %	35,3 %	64,7 %	100,0 %	76,4 %	23,6 %	100,0 %	82,9 %	17,1 %	100,0 %	83,9 %	16,1 %	100,0 %
4 Inpatient ward	41,9 %	58,1 %	100,0 %	51,1 %	***48,9%	100,0 %	82,2 %	17,8 %	100,0 %	88,6 %	11,4 %	100,0 %	83,7 %	16,3 %	100,0 %
5 Home care	47,0 %	*53,0%	100,0 %	57,2 %	**42,8%	100,0 %	88,6 %	****11,4%	100,0 %	77,3 %	22,7 %	100,0 %	88,0 %	12,0 %	100,0 %
Total	37,9 %	62,1 %	100,0 %	42,9 %	57,1 %	100,0 %	80,5 %	19,5 %	100,0 %	81,7 %	18,3 %	100,0 %	86,0 %	14,0 %	100,0 %

*Significantly less 'yes' than in 1 (p=0.002), 2 (p=0.018), 3 (p=0.000)[1]

**Significantly less 'Yes' than in 1 (p=0.000), 2 (p=0.001), 3 (p=0.000).

***Signifantly less 'yes' than in 3 (p=0.02)

****Significantly less 'yes' than 1 (p=0.000) and 3 (p=0.0

[1] P-values are from ANOVA and Post Hoc tests

Table 2. The association between different areas of self-assessed professional competence and addressing national guidelines/policies and self-rated quality of care among a random sample of Finnish elderly care workers.

	Dependent variable: Quality from 4-10								
	Model 1			Model 3			Model 4		
	F	Sig.	Partial Eta Squared	F	Sig.	Partial Eta Squared	F	Sig.	Partial Eta Squared
Corrected Model	4,613	0,000	0,036	17,501	0,000	0,060	4,196	0,000	
Intercept	33916,332	0,000	0,946	37358,178	0,000	0,963	9801,985	0,000	
Pain treatment	1,746	0,175	0,002						
Supporting the self-determination of a person with memory disorders	4,406	0,012	0,004	6,694	0,001	0,007	7,928	0,000	0,010
Enhancing rehabilitation	1,256	0,285	0,001						
Nutrition	1,724	0,179	0,002						
Falls prevention	1,138	0,321	0,001						
Palliative/end of life care	5,413	0,005	0,006	5,194	0,006	0,005	1,338	0,263	0,002
Multidimensional assessment of	0,274	0,761	0,000						
Pharmacological treatment	2,474	0,084	0,003						
	R Squared = ,036 (Adjusted R Squared = ,029)								
	Model 2								
	F	Sig.	Partial Eta Squared						
Corrected Model	17,364	0,000	0,044						
Intercept	52038,310	0,000	0,965						
Act for elderly	10,894	0,001	0,006	9,049	0,003	0,005	7,868	0,005	0,005
Quality recommendations	12,423	0,000	0,007	9,987	0,002	0,005	3,105	0,078	0,002
Memory policy	8,256	0,004	0,004	6,276	0,012	0,003	5,354	0,021	0,003
Development program for	0,008	0,930	0,000						
Prevention of home and leisure accident injuries	1,262	0,261	0,001						
work unit							10,228	0,000	0,025
job title							3,266	0,011	0,008
age							1,856	0,000	0,054
	R Squared = ,044 (Adjusted R Squared = ,041)			R Squared = ,060 (Adjusted R Squared = ,057)			R Squared = ,145 (Adjusted R Squared = ,110)		

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Annex

Questions

Questions from the original survey that were used in the thesis

1.5 Job title (1 – Head Nurse / assistant head nurse, 2 – Registered Nurse, 3 – Assistant Nurse, 4 – Care assistant, 5 – Ward domestic or similar, 6 – Physiotherapist or similar, 7 – other, please describe?)

1.12 Do you have a supervisor position? (1 – No, 2 – Yes, and my subordinates do not have subordinates, 3 – Yes, and my subordinates have subordinates, 4 – Yes, and my subordinates' subordinates have subordinates)

8.1 Give a general grade for quality provided in your work unit on a scale 4-10

How do you perceive your own professional competence in the following areas? 1 – Good, 2 – Average, 3 – Need for further education)

8.11 Pain treatment

8.12 Supporting the self-determination of a person with memory disorders

8.13 Enhancing rehabilitation

8.14 Nutrition

8.15 Falls prevention

8.16 Palliative/end of life care

8.17 Multidimensional assessment of function

8.18 Pharmacological treatment

At your work place, have you addressed (yes or no)

8.19 The Act for Elderly Care

8.20 Quality recommendations for elderly care

8.21 National memory policy

8.22 Development program for informal care

8.23 Target Programme for the Prevention of Home and Leisure Accidents

Popular science summary

The world is aging. In Finland, the number of elderly has been increasing during the last decades and will keep on increasing. The present Finnish government has set targets to decrease the number of institutionalized care, like nursing homes, and increase the number of elderly receiving home care. Workers in elderly care require different professional skills, in order to cope with elderly, who have several different medical conditions and medications. Therefore, the workers need competence in several different areas, and further, understanding of why they must work according to different procedures and standards. It is essential to have knowledge on different policies that guide the care. A study among Finnish elderly care workers revealed, that when examining the relationship between professional competence, different guidelines and policies and quality of care provided, one area of competence was seen to be strongly associated with higher perceived quality: supporting self-determination of a person with memory disorder. Also, competence in palliative care was seen to be associated with higher quality. The results of the study also revealed, that where the person was working, what was the worker's title and age were strongly associated with higher quality and these factors explained why there was variation among the rating of the quality. As an example, workers in home care rated the quality the lowest and this was significantly lower than in other work units and supervisors rated the quality higher than nurses. When considering other things that might influence the experienced quality of care provided, feeling of rush or not having enough time to do one's tasks and whether the workers have control over their job, could be important reasons why, for example, home care rated their quality lower. An implication of the study could be that, providing additional training for the workers in elderly care in the areas where they do not feel competent, is important to secure high quality care for all.