

## Research rapport

# Gerontology and geriatrics in Dutch educational programmes

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## **Nederlandse samenvatting**

**Inleiding:** Het aantal ouderen zal de komende jaren sterk toenemen en zo ook de behoefte aan verpleegkundigen in de zorg voor ouderen. Helaas blijkt dat studenten niet gemotiveerd zijn om met ouderen te werken en daarnaast blijkt uit buitenlandse studies dat studenten niet voldoende kennis hebben over (zorgen voor) ouderen. Daarnaast geven studies aan dat er een verband is tussen kennis over ouderen en de houding ten opzichte van ouderen.

**Onderzoeksvraag:** Wat leren Nederlandse verpleegkunde studenten over gerontologie/geriatrie en welke barrières en stimulerende factoren voor het optimaliseren van de onderwijsprogramma's, worden ervaren door de verpleegkunde opleidingen?

**Methode:** Het onderzoek is cross-sectioneel en descriptief. De opleidingen werden gevraagd een survey over de verpleegkunde bacheloropleiding in te vullen. Ook werden zij gevraagd de link naar een enquête naar minstens vijftig laatstejaars verpleegkunde studenten te e-mailen. Alle data werden in mei en juni 2011 verzameld.

**Resultaten:** 12 (70,9%) hogescholen en 304 studenten hebben deelgenomen aan het onderzoek. 25% van de hogescholen geven onderwijs over gerontologie en geriatrie geïntegreerd in zowel geïntegreerde als alleenstaande vakken. Geen van de scholen onderwijst in alleen alleenstaande vakken. Verpleegkunde studenten hebben gemiddeld 17,9 van de 35 kennisvragen over ouderen(zorg) correct beantwoord. 16,1% van de studenten wil liever of zeker wel met oudere patiënten werken. De meest herkende barrières zijn: gebrek aan interesse in gerontologie/geriatrie bij studenten, gebrek aan rolmodellen/voorbeelden in gerontologie/geriatrie in klinische settings, curriculum is al overladen en een negatief beeld van gerontologische/geriatrie verpleegkunde. 58,3% van de hogescholen wil steun in het opleiden van docenten en beter en meer lesmateriaal.

**Conclusie:** De drie belangrijkste aandachtspunten, zijn: 1)er moet geïnvesteerd worden in rolmodellen op de opleidingen en op stageplaatsen, 2)er dienen meer en betere lesmaterialen te komen en 3)gerontologische en geriatrie onderwerpen dienen meer als alleenstaande vakken gegeven te worden.

**Trefwoorden:** verpleegkunde opleidingen, Nederland, motivatie, kennis, ouderen.

## **Abstract**

**Aims:** This paper is a report of a study to better educate students on (caring for) elderly and to enhance the students' motivation to work with older patients to match the growing need for nurses in elderly care.

**Background:** The amount of elderly will increase in the next decades, as will the demand for nurses in elderly care. Unfortunately students appear not to be motivated to work with elderly patients and foreign studies show that nursing students lack the needed knowledge on elderly (care). Studies also show that there is a link between knowledge on elderly and attitude towards elderly.

**Methods:** This study is cross-sectional and descriptive. Schools were asked to complete a survey on the nursing educational programme. They were also asked to e-mail the link to the questionnaire to at least fifty final year students. All data were collected in May and June of 2011.

**Results:** 12 (70,9%) nursing bachelor educational programmes and 304 students participated. 25% of the schools provide the subjects in stand alone courses as well as integrated. None provide the subjects in stand alone courses only. Nursing students answered an average of 17,9 out of 35 questions on elderly (care) correctly. 16,1% of the students prefer or definitely want to work with older patients. The most recognized barriers are: a lack of interest in gerontology/geriatrics in students, a lack of role models and examples from elderly care, overloaded curricula and a negative image of caring for older people. 58,3% of the schools need support in both teaching the nursing staff and material for students.

**Conclusion:** The three most important areas of interest are: 1)more need to be invested in roll models on the schools and at internships, 2)more and better teaching material need to be provided and 3)gerontological and geriatric topics need to be taught in stand alone courses.

**Keywords:** nursing educational programmes, the Netherlands, motivation, knowledge, elderly.

## Introduction

The world's population is changing. In the U.S., there has been an 80% increase of older people since 1920 and it is predicted that, by 2030, 20% of the U.S. residents will be over 65 years (Towner 2006). In the Netherlands, the same changes are seen. In twenty years time the amount of elderly (people of 65 years and older) will increase from 14% in 2005 to 21% in 2025 (Blokstra et al. 2007). The Dutch elderly population will grow from 2,6 million in 2011 to 4,6 million in 2040 (CBS 2011). This increase will result in a greater need for healthcare, which leads to higher costs (Blokstra et al. 2007). Costs in care for older people increase by 2,5% a year (Luijben & Kommer 2010).

Health care has intensified in the last decades. A large part of the health care demands are met by employing more nursing staff. This resulted in a large expansion of employment in health care; in 1970 there were 320.000 jobs in health care in the Netherlands, 6,5 percent of the total Dutch employment. In 2008 there were 866.000 jobs in health care, almost 13% of the total employment. The demand for health care employees is growing by approximately 1,4% each year till 2030. Unfortunately, the supply of health care workers is decreasing with an average of 0,2% each year (Luijben & Kommer 2010). This means that the supply and demand of health care employment do not match.

This becomes an even bigger issue when we take into consideration that in twenty years time, 75% of all nursing staff is needed in elderly care (Holroyd et al. 2009). Elderly care consists of gerontology and geriatrics. Gerontology is a branch of general science that looks at aging as a normal phase of life (Kruk van der et al. 2003). Gerontology looks at medical, biological and social-scientific aspects of aging. (<http://www.thesauruszorgenwelzijn.nl>). Geriatrics is the branch of general medicine that looks at the clinical aspect of aging as well as prevention and rehabilitation (Kruk van der et al. 2003). Elderly care is provided in almost all health care fields; hospitals, home care, nursing homes and other fields.

The Dutch television program EenVandaag conducted a survey on the motivation of nursing students to work with older people, by questioning 1.900 nursing students. The questionnaire showed that nursing students do not want to work in elderly care. They prefer working in hospitals (Nursing 2011). An Australian study showed that students have a positive attitude towards elderly but that they do not prefer working with them (Henderson et al. 2008). Other studies show that nursing students have a negative attitude towards older people (Söderhamn et al. 2001, Lovell 2006, Zambrini et al. 2008). One study looked at all health care educational programmes and found that this negative attitude is also seen in other health care educational programmes (Lovell 2006). A negative attitude towards elderly appears to be an interdisciplinary problem.

The lack of motivation to work with elderly and the growing shortages in health care create a huge problem for the future. This demonstrates the importance of changing the motivation and attitude of nursing students. There appears to be a link between knowledge on elderly and attitude towards them. Studies have shown that people, including nursing students, think more positive about older people after receiving information on elderly (Ragan & Bowen 2001, Lambrinou et al. 2009, McKinlay & Cowan 2003). If this is the case, it is essential to gain insight in the educational programmes and the knowledge of nursing students. Studies on the content of curricula of nursing educational programmes regarding care for elderly have been conducted in the U.S. (Rosenfeld et al. 1999, Berman et al. 2005, Gilje et al. 2007), Sweden (Fagerberg & Gilje 2006) and Belgium (Deschodt et al. 2009). These studies show that, besides a lack of motivation to work with elderly, nursing students often have a lack of knowledge on gerontology and geriatrics. One study from the U.S. looked at the precise level of knowledge of nursing students (Towner 2006). The author concludes that the curricula need to be expanded with gerontological and geriatric contents. Another conclusion is that the educational institutes need to make the students more aware of the social and political context of elderly care (Towner 2006). Two other studies state that it is desirable to introduce gerontology and geriatrics as stand alone subjects as supposed to having gerontological and geriatric contents integrated in other subjects (Gilje et al. 2007, Rosenfeld et al. 1999).

In the Netherlands there is a nursing educational programme that educates students to gain a bachelor degree (in Dutch level 5), these programmes are taught at the Universities of Applied Sciences. The students can study in three different ways:

- Fulltime; the students study approximately 40 hours a week. This is the most chosen way to study and it takes students four years to graduate.
- Part-time; the students study approximately 20 hours a week and it will take them longer to graduate.
- Dual; the students studies half of the time and works the other half for a health care organisation.

In the Netherlands, no study on the curricula of nursing educational programmes for their content of care for older people has been conducted. Considering the earlier described problematic state of Dutch health care in the future, conducting a similar study in the Netherlands is relevant and needed.

## **The study**

### **Aims**

The study will provide insight in the content of the curricula and the knowledge that nursing students have on (caring for) older people. If necessary, suggestions on where the curricula need to be improved and how the content of curricula of nursing educational programmes can be improved will be given. The first aim is to better educate students on (caring for) elderly. The second aim is to enhance the students' motivation to work with older patients to match the growing need for nurses in elderly care.

The research question is:

*What do Dutch bachelor nursing students learn about gerontology and geriatrics and which barriers and/or facilitators to optimising the educational programmes are recognized by schools?*

There are four sub questions:

1. What is the content of the bachelor nursing programmes regarding gerontology and geriatrics?
2. Which barriers and facilitators are recognized by the schools to optimising the educational programmes?
3. What is the knowledge level of bachelor nursing students?
4. How willing are bachelor nursing students to work with patients of over 65 years old?

### **Design**

This study is cross-sectional and descriptive. All the data were collected in May and June of 2011.

### **Sample and participants**

The Netherlands has seventeen Universities of Applied Sciences. All seventeen educational institutes were informed about the study and asked for their participation. The target population and accessible population are the same for this study; all bachelor nursing educational programmes in the Netherlands. The board of every institute received a letter with information about the study. The institutes were asked to give the name of the lecturer that could complete a survey on the curriculum of the programme. This lecturer received the survey and a letter with information about the study by mail. The participants were selected through purposive sampling; they were selected based on their knowledge on the curriculum (Polit & Beck 2008). Personal and general reminders were sent by e-mail to institutes that did not respond. Reminders to complete the survey were sent to the lecturers.

The board of the institute was also asked to spread a questionnaire among their students. This questionnaire with short information about the study was e-mailed as a link to a digital questionnaire to at least 50 students who were in their final year. These participants were selected through quota sampling. Students of all different education programmes (fulltime, part-time or dual) participated. After two weeks the students received a reminder by e-mail.

### **Data collection**

The survey used in this study was used in previous research in the U.S. and Belgium (Deschodt et al. 2009, Rosenfeld et al. 1999, Berman et al. 2005). In 1997 the survey was developed in the U.S. after thorough literature research on previous existing instruments describing the content of nursing programmes (Rosenfeld et al. 1999). The survey was revised in 2003 (Berman et al. 2005). The survey was translated into Flemish in cooperation with the European Nursing Academy for Care of Older people (ENACO). The survey was validated by a panel of five experts on nursing education (Deschodt et al. 2009).

For this study, the survey was adapted from Flemish to Dutch and questions were changed to be appropriate for the Dutch educational system. During this translation, three researchers also checked the feasibility for the situation in the Netherlands. This was done by discussing the needed changes to the survey and achieving agreement among the three researchers. The revised survey was assessed by four teachers at Universities of Applied Sciences. The survey was revised after receiving their comments. The survey consists of four parts:

- (1) Seventeen general questions on the educational institute and the nursing educational programme.
- (2) Ten questions on the gerontological/geriatric content of the nursing educational programme. The institutes were asked about the presence of fourteen gerontology/geriatric topics in the curricula of the nursing educational programme. The original survey contained seven of these fourteen topics. Seven topics on specific health problems that occur often in older people, were added for this study. The institutes were also asked how these topics were taught and if they were taught in elective or required courses.
- (3) Five questions about the barriers and/or facilitators to optimizing the educational programmes.
- (4) Four questions on the characteristics of the staff of the nursing educational programme.

A questionnaire for nursing students was developed. It consists of three parts;

- (1) Seven questions on demographic variables (anonymous). The three researchers agreed on what basic demographic information was needed. One of these questions is on the willingness of students to work with older people.

(2) A question on the content of the curriculum of their educational programme about caring for elderly. This question consists of the same fourteen topics as the second part of the survey. The students were also asked how these topics were provided and if they were taught in elective or required courses. This question was chosen to compare the students' judgements to that of the schools.

(3) The last part of the questionnaire was about the students' knowledge on (the care for) older people. The 35 questions can be answered as 'correct', 'incorrect' and 'I don't know'. The first 25 questions are from the Facts on Aging Quiz (FAQ), an international questionnaire developed for measuring knowledge on elderly (Palmore 1970). The FAQ was developed thirty years ago, for sociology students (Palmore 1977). Nowadays, the FAQ is generally used to measure and teach caring for elderly in medical education programmes (Unwin et al. 2008). In contrast to other questionnaires, the FAQ contains questions on knowledge, values and social and cultural themes (Unwin et al. 2008). Several studies have proved the FAQ's reliability and validity (Palmore 1980, Miller & Dodder 1980, Laner 1981). These studies also concluded that the FAQ can be used to measure knowledge on elderly (Palmore 1980, Miller & Dodder 1980, Laner 1981) and that it could even be a practical guide to group's educational needs (Palmore 1980). There were some critiques on the questionnaire (Miller & Dodder 1980) but they were revised and this revised version was used in this study. The FAQ was translated from English to Dutch by the researchers. Seven questions about specific health problems that occur often with older people (such as depression and delirium) were added. Another three questions on informal care (provided by family members, friend and neighbours) were added. Most of the answers to these questions can be found in a textbook that is often used at nursing programmes (Kruk van der et al. 2003). The questionnaire was translated and revised after mutual agreement of the three researchers.

### **Ethical considerations**

The study was sent for approval to the Medical Ethical Committee of a large academic hospital. They concluded that the study did not need ethical consent. The schools and persons completing the survey or questionnaire were informed about the study and asked for their cooperation. Those who wanted more informed could contact the researcher and receive additional information from the researcher through a phone call or a visit. Returning the survey or questionnaire was considered as giving consent. The data were analysed anonymously.

### **Data analysis**

The collected data were analysed using SPSS 15.0. The data were analysed using descriptive statistics. Means, ranges, percentages and raw numbers were calculated for the

total sample, as well as parts of the sample. After these analyses, a t-test for independent samples was used to examine the correlation amongst two variables.

## **Results**

Twelve out of the seventeen Universities of Applied Sciences (70,6%) participated in both the survey and the student questionnaire. Figure one provides an overview of the contacted and participating schools. The questionnaire was completed by 304 students.

### **Bachelor nursing programmes**

Nine of the twelve Universities of Applied Sciences (75%) work together with universities. Most of these collaborations are formal and concern the curricula (77,8%) and the institution policies and research (both 44,4%). In 66,7% of the schools with collaborations, gerontology and geriatrics are part of this collaboration. These and more characteristics of the schools can be found in table 1. Eight (66,7%) of the Universities of Applied Sciences provide shared subjects with other health care educational programmes. Three (25%) of the Universities of Applied Sciences offer the possibility of graduating with gerontology/geriatrics as main subjects. 58,3% of the Universities of Applied Sciences taught topics on gerontology and geriatrics integrated in other courses. 25% of the schools provide the subjects in stand alone courses as well as integrated.

Table 2 shows information on the educational institutes' faculty, the nursing educational programmes consists of an average of 22,2 full time equivalent of which 3 full time equivalent are involved in the development of education on gerontology and geriatrics. An average of 27,7% of the total full time equivalents is involved in the development of education on gerontology and geriatrics.

Both the schools and the students were given a list with gerontology/geriatric topics and were asked which topics were taught in the nursing programme. The results can be seen in table 3. According to 100% and 91,7% of the Universities of Applied Sciences, they teach the following topics: normal aging process, ethical issues and legal issues. The students top three taught topics, are: legal issues (81,6%), ethical issues (72,7%) and normal aging process (72,4%). This matches the schools answers. Topics that were taught according to the least amount of students, are: sleep disorders (24,3%), gerontological/geriatric theories and models (30,9%) and depression (32,6%). According to the schools, these topics are taught in respectively 66,7%, 83,3% and 83,3% of the educational programmes. These percentages do not match.

Almost all topics are taught in school or both in school as internships and in required courses.

### **Barriers to optimising the educational programmes**

The schools were given a list of fifteen possible barriers to optimising the curricula with regard to gerontology and geriatrics. Table 4 provides an overview of all barriers and the amount of schools that recognize these barriers as present. The schools say the following barriers are most present:

- 1) Lack of interest in gerontology/geriatrics in students.
- 2) Lack of role models and examples from the practice of elderly care.
- 3) Curricula are already full.
- 4) Negative image of a gerontological/geriatric nurse.

Barriers that the schools do not recognize are:

- 1) Inadequate facilities.
- 2) Lack of support from the institutions policy.
- 3) Lack of support from the governments' educational policy.

In the survey, the schools were also asked what they need to optimise the curricula on gerontology and geriatrics. Seven (58,3%) of the schools need support in both teaching the nursing staff and material for students. Two (16,7%) schools need no support to optimise the educational programme. Out of the nine schools that need support in teaching their staff, nine (100%) want the staff to be taught more theoretical knowledge, eight (88,9%) want their staff to gain more experience in caring for elderly and seven (77,8%) of the schools claim their staff need to improve their motivation and attitude.

Eleven (91,7%) of the schools think that audio material is needed to better educate students. Nine (75%) schools think there is a need for interactive material on the internet. Instructions via computer (41,7%), written material (33,3%), interactive video conferences (33,3%) and video material (33,3%) were also mentioned as needed material to better educate students. Nine of the twelve (75%) schools have plans to changing the curricula of their nursing educational programme. Two (16,7%) schools have recently changed the curriculum.

### **Knowledge on elderly of bachelor nursing students**

Table 5 provides an overview of the characteristics of the 304 participating students, of which 89,5% women. 28,6% of the students have previously done a health care study. Most students study fulltime (76,6%).

Out of the 35 questions about (caring for) older people, there are eighteen questions that more then 50% of the students answered incorrectly. Thirteen out of the 25 Facts on Aging Quiz questions are answered incorrectly by the students, as are five out of the ten extra

questions that were added. In both parts of the knowledge questions the students answered half of the questions incorrectly. The following six questions are answered incorrectly by more than 80% of the students:

- At least one-tenth of the aged are living in long-stay institutions such as nursing homes, mental hospital and homes for the aged.
- The majority of old people say they are seldom bored.
- Older workers have fewer accidents than younger workers.
- More than 20 percent of the population is now 65 and older.
- The majority of old people say they are seldom irritated or angry.
- One in every 15 family caregivers is feeling overwhelmed.

The students have an average of 17,9 correctly answered questions. This ranges from seven to 35.

### **Willingness of students to work with elderly**

70,4% of students have worked as a trainee at a nursing or care home. One question in the questionnaire was whether students were willing to work in an environment where most patients are 65 years old or over. The statistics of the given answers can be found in table 5. 41,2% of students responded with 'preferable not' and 35,5% with 'no difference'. 6,6% of students responded with 'preferably' and 9,5% with 'definitely'.

A t-test for independent samples was used to examine whether there was a correlation between the age of students and their motivation to work with elderly. The t-test showed that students that answered the question with 'definitely', 'preferably' or 'no difference' are significantly older than students answering with 'definitely not' or 'preferably not'.

### **Discussion**

A good result is that 75% of the schools work together with universities of which 66,7% also have a collaboration on topics about gerontology and geriatrics. This seems promising. Only 25% of the Universities of Applied Sciences offer the possibility of graduating with gerontology/geriatrics as main subjects, in these cases only few students choose to take these main subjects. Over half (58,3%) of the Universities of Applied Sciences taught topics on gerontology and geriatrics integrated in other courses. 25% of the schools provide the subjects in stand alone courses as well as integrated. None of the Universities of Applied Sciences provide gerontology and geriatric topics in only stand alone courses. Question is if students recognize the information on elderly as much when integrated in other subjects, in contrast to stand alone courses. The 25% that offers stand alone courses is not a lot

compared to the US, Sweden and Belgium. In the US, 51% of the schools offered stand alone courses on geriatrics (Gilje et al. 2007), 64% in Sweden (Fagerberg & Gilje 2006) and 59% in Flanders (Deschodt et al. 2009). An explanation for this might be found in the method that it used to educate students in the Netherlands. Dutch Universities of Applied Sciences teach their students through competency-based learning ([www.rijksoverheid.nl](http://www.rijksoverheid.nl)). They teach with the assumption that an upcoming professional needs to obtain certain competences. When a student can prove to have obtained these competences, he or she can receive a diploma. The clinical practice is most important, here students learn as much as possible. This way of educating has received some criticism, mostly on the content of the study (some have implied that knowledge is less important in competency-based learning), on the method of teaching (students mostly have to study on their own and spent less time at school) and on the organisation of the education (students are left to study by themselves). This competency-based learning could be a reason for the lack of stand alone courses. Material is taught in competences and clinical practices, less in labelled stand alone courses.

Students and schools are not in agreement about the topics that are taught in the least amount of schools. A comparison between the students and the schools opinions was made for the three schools of which the most students completed the questionnaire. This comparison confirmed that schools and students differ in their answers. This means that it is difficult to draw conclusions from this data. It is unclear if the schools gave the correct answers. If they did, it can be presumed that the information did not stick with the students. This could be a result of the competency-based learning that students receive. Because students are not taught in stand alone labelled courses, it could be that they do not recognize the topics.

Barriers most recognized by schools are: a lack of interest in gerontology/geriatrics in students, a lack of role models and examples from elderly care, overloaded curricula and a negative image of caring for older people. The lack of role models and examples and the negative image could be seen as a cause for the first major barrier; the lack of interest in gerontology and geriatrics. Lack of interest and motivation were also the most chosen barriers in the research from Belgium (Deschodt et al. 2009) and Sweden (Fagerberg & Gilje 2006). These findings are supported by the finding that students do not appear to be motivated to work with older people. The majority of 41,2% answered 'preferable not' to the question whether they were willing to work with patients of 65 years and older. Only 6,6% of the students answered that they prefer working with elderly. These numbers can also be looked at positively; over half of the students (51,6%) want to work with elderly or state that it makes no difference to them. Students that answered the question with 'definitely', 'preferably' or 'no difference' are significantly older than students answering with 'definitely

not' or 'preferably not'. An explanation could be that older students often did a health care study previous to their current bachelor programme. It seems likely that experience in caring for elderly influences the motivation to work with older patients.

Unfortunately, these percentages of students wanting to work with older patients are not sufficient to the even greater and growing demand of nurses in elderly care. This negative attitude and lack of motivation is a huge problem giving the fact that in twenty years time, 75% of all nursing staff are needed in elderly care.

75% of schools say they need support in teaching their staff. They want the staff to be taught more theoretical knowledge, gain more experience in elderly care and more than half also think their staff need to improve their motivation and attitude. This last statement seems to be very important when compared to the recognized barriers. It seems logical that when students are being taught about elderly by under motivated teachers, their interest and motivation will suffer and they will experience a lack of role models. Students have internships every year and most students have internships in organisations where elderly are the main patient group. Here students can also find role models and examples. Unfortunately, there are not many level five nurses remaining in elderly care. More level five nurses should be instated to act as role models and examples to students. In March 2010 a government programme was started to bring 240 bachelor educated nurses in elderly care within two years ([www.hbo-vgg.net](http://www.hbo-vgg.net)). Evaluations show that it takes much effort to realize this plan. The schools also stated that more and better material to teach students is needed. They recommend the use of; interactive material on the internet, instructions via computer, written material and also; interactive video conferences and video material.

Out of the 35 knowledge questions, the students have an average of 17,9 questions answered correctly. The students were in their final year and weeks from graduating and most of the ten added questions came from one of the basic study books on caring for elderly people. The first questions are the FAQ and this is considered to be the main instrument for measuring knowledge on older people. Palmore (1980) states the average person, with high school education, gets a little over one-half correct. This study has shown that the nursing students have one-half of the questions correct; this is insufficient for future nurses that are about the graduate.

### **Methodological considerations**

This study is the first study of the nursing curricula in the Netherlands on their gerontological and geriatric content. The researchers paid a lot of attention to optimising the survey that was used. The survey has been used and validated in previous research (Deschodt et al. 2009, Rosenfeld et al. 1999, Berman et al. 2005). A panel of researchers and teachers

validated the Dutch version of the survey. Several schools reported back to the researcher that they found the survey to be complicated and time-consuming. As a result, a few surveys were not fully completed; some questions were not answered and could therefore provide limited results.

70,6% response rate is good. The results of this study are therefore generalizable to all bachelor nursing educational programmes in the Netherlands. A strong aspect of this study is the student questionnaire. Earlier studies done on the nursing curricula did not involve the students, only the schools are asked about the contents. The response among students was not as good as hoped. The amount of students that completed the survey per school varied from eight to 64. This could be a bias, because the students that did complete the questionnaire could be the most involved students. This could lead to an overestimation of the results. The results of the students can not be generalized to the school because the response rate was not sufficient enough for some of the Universities of Applied Sciences. General answers on gerontological/geriatric topics can be used as well as results on the students' characteristics and knowledge.

## **Recommendations**

Nursing educational programmes in the Netherlands offer less stand alone courses on gerontology/geriatrics than other countries. Research states that it is desirable to introduce gerontology and geriatrics as subjects as supposed to be integrated in other subjects (Gilje et al. 2007, Rosenfeld et al. 1999). This is strengthened by the appearance that the taught gerontological/geriatric topics do not stick with the students. The competency-based learning in the Netherlands could be the cause for this. It is advised to provide clearly labelled, obligated, stand alone courses in gerontology and geriatrics.

Caring for older people is a big and growing part of health care, it therefore seems logical to give students the possibility of graduating with gerontology/geriatrics as main subjects. But before this is done, it is necessary to improve the attitude and motivation of students and teachers. Schools need to improve the knowledge, experience and motivation of teachers. Students need positive role models that are enthusiastic in teaching about elderly. This means that teachers will have to return to the practice of working with older people and will have to go to trainings to improve their knowledge. Other studies also conclude that faculty expertise in gerontology and geriatrics needs to be improved (Berman et al. 2005, Gilje et al. 2007).

Students need role models and examples; these can and have to be found in their internships. Most students have an internship in a nursing home and lack role models. There are not a lot of bachelor educated nurses working in the care for elderly in the Netherlands.

More level five nurses have to be instated in elderly care (Hamers 2010).

More and better study material needs to be available for students. Interactive material on the internet and instructions via computer are requested, the AACN guidelines (2000) can help to define what students need to learn. Nursing students lack the needed knowledge on elderly (care). It is advisable to offer new, required courses on gerontology and geriatrics.

International studies have also shown that more gerontology-related topics need to be taught, in required courses (Rosenfeld et al. 1999, Deschodt et al. 2009,

These courses need to be written and taught in collaboration with other health care educational programmes and professionals (Slaets et al. 2010, Gilje et al. 2007). It is important to involve health care professionals and organizations in elderly care in this process because after graduation nurses will have to work closely together with other professions. When they start working together during the educational programme they will learn more and be more likely to have productive collaborations as professionals. This process will also provide health care professionals the chance to learn from these collaborations. This can be seen as intra- or interdisciplinary educating. (Slaets et al. 2010)

## **Conclusion**

The three most important areas of interest are: 1) more needs to be invested in role models on the schools and at internships, 2) more and better teaching material in collaboration with other health care educational programmes need to be provided and 3) gerontological and geriatric topics need to be taught in stand alone courses. To achieve this, more attention to teaching gerontology and geriatrics is needed. Teachers must improve their motivation and attitude and must be aware of the changing health care that they need to prepare their students for. The biggest problem in elderly care is the lack of motivation and interest. This needs to be addressed immediately.

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## Figures and tables

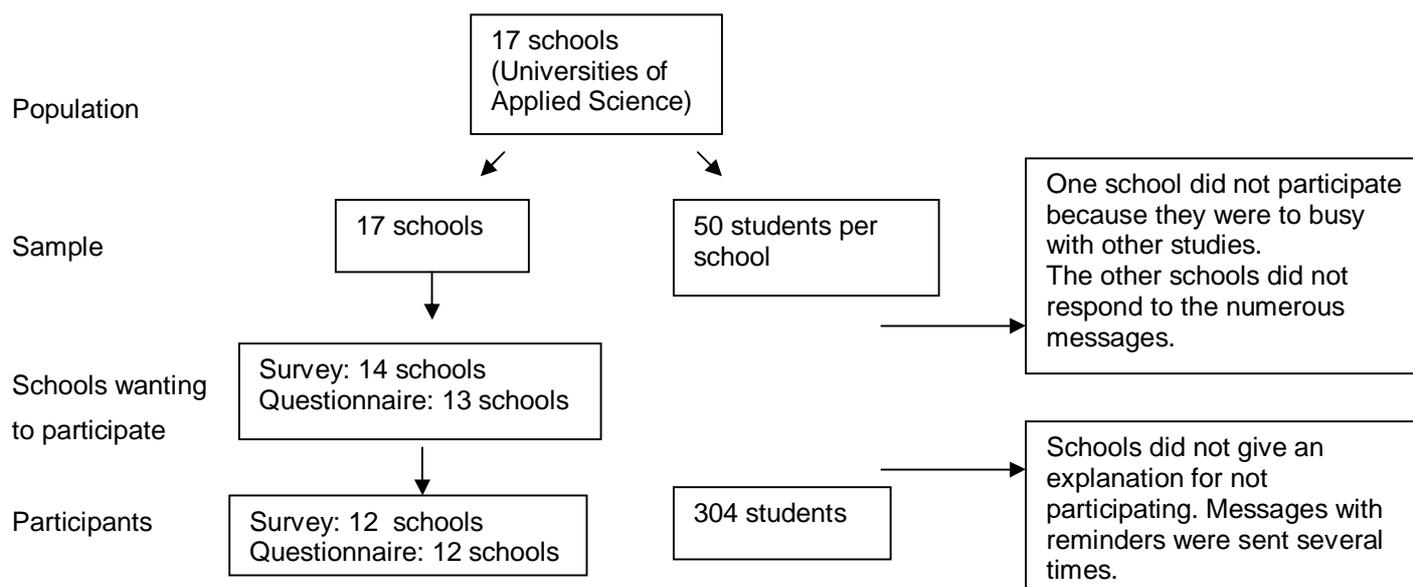


Figure 1: Population and participants.

		<b>hbo</b>
Participating schools		12
Collaboration with university		yes 9 (75%) no 3 (25%)
Collaboration with respectively university		formal collaboration 6 (50%) informal collaboration 1 (8,3%) both 2 (16,7%)
Collaboration on a level of		policy 4 curricula 7 social welfare 1 research 4 other 1 gerontology/geriatrics 6
Subjects with other health care educational programmes		yes 8 (66,7%) no 4 (33,3%) subjects on gerontology/geriatrics 4 (33,3%)
Schools were graduation with geriatric and gerontology as main subject is possible		yes 3 (25%) no 6 (50%)

Geriatrics and gerontology taught in ...	stand alone courses	1 (8,3%)
	integrated in courses	7 (58,3%)
	both	3 (25%)

Table 1: Characteristics of the Universities of Applied Science.

	<b>Hbo (12)</b>
Mean number of fulltime equivalent in the entire nursing educational programme.	22,2 fte Range: 10 - 49
Mean number of fulltime equivalent involved with the development of education on gerontology and geriatrics.	3 fte Range: 0,5 - 10
Mean percentage fulltime equivalent involved in gerontology/geriatrics of the full time equivalent in the nursing educational programme.	38% (n=7) Range: 1 – 100%
Mean number of experts on gerontology and geriatrics, present in the educational institutes.	3,7 (n=11) Range: 1 – 7,5
Mean number of experts still in clinical practice of gerontology and geriatrics.	1,1 (n=11) Range: 0 – 7
Mean number of experts involved with research on gerontology and geriatrics.	0,8 (n=11) Range: 0 – 2
Mean number of experts participating in social welfare.	0,5 (n=11) Range: 0 – 2
Mean number of experts that regularly attend training on gerontology and geriatrics.	1,5 (n=11) Range: 0 - 7

Table 2: Characteristics of the educational institutes' faculty.

	<b>% schools (12) that say the topic was taught</b>	<b>% students (304) that say the topic was taught</b>
Normal aging process	12 (100%)	220 (72,4%)
Gerontological/geriatric theories and models	10 (83,3%)	94 (30,9%)
Prevention and health promotion in gerontology/geriatrics	10 (83,3%)	153 (50,3%)
Prevention of falls in elderly patients	10 (83,3%)	189 (62,2%)
Nutrition for elderly patients	8 (66,7%)	117 (38,5%)
Incontinence in elderly patients	9 (75%)	175 (57,6%)
Sleep disorders in elderly patient	8 (66,7%)	74 (24,3%)
Family care	10 (83,3%)	140 (46,1%)

Deliriums in elderly patients	10 (83,3%)	168 (55,3%)
Depression in elderly patients	10 (83,3%)	99 (32,6%)
Dementia in elderly patients	10 (83,3%)	184 (60,5%)
Ethical issues	12 (100%)	221 (72,7%)
Legal issues in health care for elderly	11 (91,7%)	248 (81,6%)
Organizational issues	8 (66,7%)	122 (40,1%)

Table 3: Topics taught according to schools and students.

		<b>Not a barrier</b>	<b>Not much of a barrier</b>	<b>Somewhat of a barrier</b>	<b>A serious barrier</b>
A	Not enough fulltime teachers qualified in gerontology and geriatrics.	3 (25%)	2 (16,7%)	3 (25%)	4 (33,3%)
B	Not enough part-time teachers qualified in gerontology and geriatrics.	3 (25%)	2 (16,7%)	3 (25%)	4 (33,3%)
C	Lack of qualitative internships in gerontology and geriatrics.	4 (33,3%)	2 (16,7%)	1 (8,3%)	5 (41,7%)
D	Inadequate facilities	9 (75%)	1 (8,3%)	1 (8,3%)	0
E	Lack of interest in gerontology/geriatrics in students.	0	0	5 (41,7%)	7 (58,3%)
F	Lack of interest in gerontology/geriatrics in teachers.	1 (8,3%)	5 (41,7%)	4 (33,3%)	2 (16,7%)
G	Lack of support from the institutions policy.	6 (50%)	3 (25%)	3 (25%)	0
H	Lack of support from the governments educational policy.	4 (33,3%)	3 (25%)	1 (8,3%)	1 (8,3%)
I	Lack of role models and examples from the practice of elderly care.	0	2 (16,7%)	4 (33,3%)	6 (50%)
J	Lack of clearly formulated curricula on gerontology and geriatrics.	2 (16,7%)	6 (50%)	0	3 (25%)
K	Lack of the institutes (financial) means.	4 (33,3%)	1 (8,3%)	1 (8,3%)	4 (33,3%)
L	Curricula are already full.	1 (8,3%)	2 (16,7%)	2 (16,7%)	7 (58,3%)
M	Lack of formulated standardized qualities for gerontological and geriatric health care.	4 (33,3%)	4 (33,3%)	1 (8,3%)	3 (25%)
N	Lack of leadership in the nursing profession.	1 (8,3%)	4 (33,3%)	4 (33,3%)	1 (8,3%)
O	Negative image of a gerontological/geriatric nurse.	0	1 (8,3%)	2 (16,7%)	8 (66,7%)

Table 4: Recognized barriers to optimising educational programmes.

	<b>Schools (12)</b>
Number of participating students	304 (from 12 schools)
Mean age	23,90
Sex	32 men (10,5%) 272 women (89,5%)
Willingness to work with patients of 65 years and older	Definitely not: 22 (7,2%) Preferable not: 125 (41,1%) No difference: 108 (35,5%) Preferable: 20 (6,6%) Definitely: 29 (9,5%)
Knowledge questions answered correctly	Mean: 17,91 Sd: 4,24 Range: 28 (7-35)

Table 5: characteristics of nursing students.