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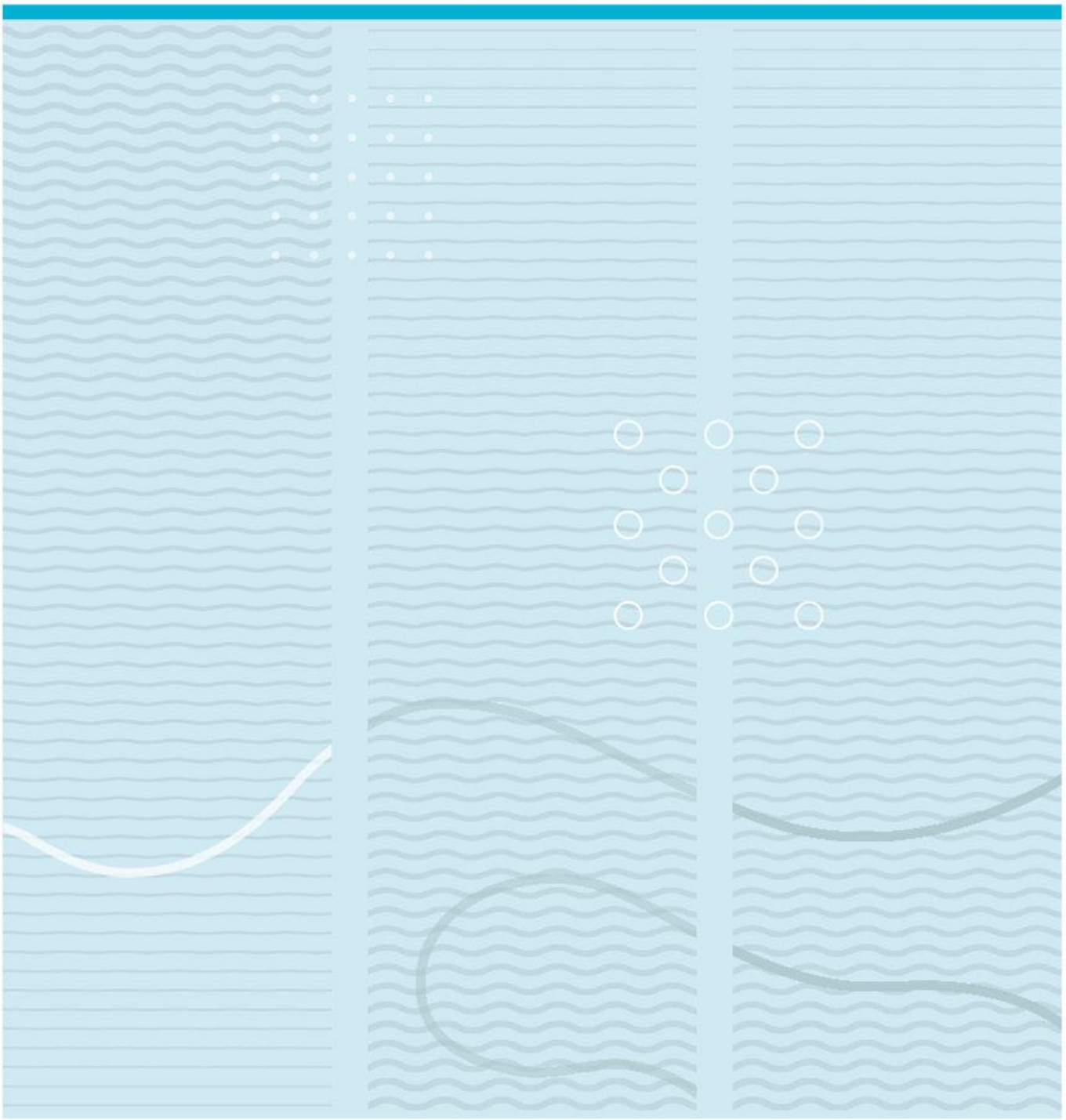
The challenges and advantages of advanced nurse practitioners in Norwegian community healthcare, as experienced by nurse managers

A qualitative study



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This thesis is worth 30 study points

Summary

This paper is a descriptive qualitative study about Norwegian nurse managers' experiences related to the implementation of advanced nurse practitioner in community healthcare.

Advanced practice nursing is progressing globally. Norway has started to implement the advanced nurse practitioner role in an attempt to fill a competency gap in community healthcare. The advanced nurse practitioner role is still very new in Norway. This paper adds to the mapping of the role in Norway and can serve as an inspiration for further development of advanced nurse practitioner roles in Norway.

This paper has two sections. The first section is an article written for BMC nursing. The author guidelines for BMC nursing are in the annexes section at the end of this paper. In the second section I have chosen to describe Callista Roy's conceptual adaption model for nursing and give an example of how the model can be used to further understand the nurse managers' experiences of advanced competency brought to the community healthcare through the implementation of the ANP role.

Sammendrag

Denne oppgaven handler om norske sykepleier ledere sine erfaringer i forhold til implementeringen av avanserte geriatriske sykepleiere i kommune helsetjenesten.

Norge har forsøkt å fylle et kompetansegap i kommune helsetjenesten. Den avanserte geriatriske sykepleie rollen er fortsatt veldig ny i Norge. Denne oppgaven handler bidrar til å kartlegge funksjonen i Norge og kan bidra som en inspirasjon til videreutvikling av avanserte kliniske sykepleie roller i Norge.

Oppgaven har 2 deler. Den første delen inneholder artikkelen som er skrevet for BMC Nursing. Forfatterveiledningen er lagt til som vedlegg på slutten av oppgaven. I andre delen av oppgaven har jeg valgt å beskrive Callista Roy's adapsjons modell for sykepleie og gi et eksempel på hvordan modellen kan brukes for å videre forstå sykepleielederes erfaringer med den økte kompetansen brakt inn i kommune helsetjenesten via implementeringen av en avansert geriatrisk sykepleie rolle.

Contents

"Reasoning draws a conclusion, but does not make the conclusion certain, unless the mind discovers it by the path of experience."

Roger Bacon

1 Article for BMC Nursing

The challenges and advantages of advanced nurse practitioners in Norwegian community healthcare, as experienced by nurse managers: A qualitative study

ABSTRACT

Background: Advanced practice nursing is evolving worldwide. Advanced nurse practitioners have been implemented in Norway to fill a competency gap in community healthcare. This role is new in Norway and little is known about what this role can contribute. The aim of this study was to explore and describe nurse managers' experiences with the implementation of the advanced nurse practitioner role in community healthcare in Norway.

Methods: A qualitative descripting design was used in this study. Semi-structured interviews were conducted with seven nurse managers in community healthcare. Thematic analysis was used to analyse the data.

Findings: The participants were congruent in their experiences of challenges and advantages in conjunction with implementing advanced nurse practitioner roles in their service. The challenges were mainly tied to lack of role clarity which led to difficult collaboration efforts and lack of funding. The advantages were tied to the excelled competency of the advanced nurse practitioners. Advantages included increased patient disease prevention, patient health promotion, increased staff competency, increased level of professionalism in the healthcare service and better assessments for level of care contributing to cost containment.

Conclusions: This study shows that a lack of understanding about the advanced nurse practitioner role and its advantages necessitates the documentation of role description and

the dissemination of this information to essential collaborators as well as the general public. Nurse managers play a pivotal part as advocates for the ANP role. This study is also a contribution towards mapping the Norwegian advanced nurse practitioner role as a part of global role development as well as serving as a foundation for further development of the advanced nurse practitioner role in Norway.

Key words: Advanced nurse practitioner, nurse manager, competence, thematic analysis

INTRODUCTION

Changes in society, such as changing demographics and increased complexity in healthcare needs, have demanded that nursing adapt [1]. Healthcare issues reinforcing this global demand include nurse and doctor shortage [2, 3], changes in society's overall health needs such as an increase in chronic disease and ill elderly [4], a need for better access to health care [5], a need for cost reduction [6] and a demand for increased quality of healthcare [7].

In a response to these changes, advanced practice nursing is developing and evolving continuously all over the world [8, 9] and task-shifting from doctors to nurses has become a popular way to try to meet healthcare issues [10]. Advanced practice nursing is an umbrella term used to indicate a higher level of nurse competency than that held by traditional nurses [11] Hereafter, the term advanced nurse practitioner (ANP) will be used to denote the advanced role discussed in this paper.

It is important to map national ANP roles as a contribution to global ANP development [12]. This paper will focus on the development of the ANP role in a Norwegian context, concentrating specifically on nurse manager's experiences with ANP role development in community healthcare.

BACKGROUND

The first ANP program started in the USA in 1965 [13] and has spread to Canada, Australia and on to Europe. Roles are also being developed in Africa, Asia and even in South America [9].

Sweden was the first Scandinavian country to implement the ANP role in 2005 [14], and Finland followed, starting the implementation according to ICN's recommendations in 2006 [15]. The first geriatric nurse practitioner (GNP) educational program in Norway started in 2011 [16].

In Norway, physician shortage was not the catalyst for the development of the ANP role [17]. The ANP role emerged as a response to The Coordination Reform of 2012, moving many healthcare responsibilities from the hospitals to community care in the municipalities, causing the municipalities to play the largest part in meeting the increased demand for healthcare services [18]. Given the changes in demographics such as increased amount of older people with multiple comorbidities [19-21], the focus of care has changed from curative care to preventive care [22-24]. Concurrently, care trends have shifted from institutional to home care [25, 26]. Thus, demands for an advancement of competency in the municipalities enabling delivery of high quality care have increased [23, 24, 27, 28]. Since adequately augmented national funding was not planned in conjunction with recent healthcare reforms the need for continued cost containment in healthcare continues [19]. Therefore, it has been suggested that ANPs can help fill the competency gap the recent reforms have created [28].

The ANP's responsibilities vary globally according to the country's local circumstances [13]. Numerous articles describe the lack of role clarity as a challenge to further development [12, 29, 30]. Other challenges, such as opposition of the medical profession,

funding and legislation, are also described in multiple articles [15, 31-34]. To be able to further develop ANP roles in Norway, as well as globally, it is important to understand these challenges as well as explore possible advantages the role might contribute [35].

An article written by Henni SH, Kirkevold M, Antypas K and Foss C [36] is the first that describes aspects of the Norwegian geriatric nurse practitioner (GNP) from the practitioners' perspective. Nursing leadership has a great influence on the implementation of an ANP role as they are responsible for maintaining and developing their healthcare services [37, 38], thus it is also necessary to gain a deeper understanding of nurse managers views on the issues described above. This is therefore the aim of this study.

AIM

The aim of this study was to explore and describe nurse managers' experiences related to the implementation of the ANP role in community health care in Norway.

METHOD

Design

A qualitative descriptive design was chosen because of its relevance when exploring unexplored phenomena such as the aim of this study, and its' suitability in unveiling the participants subjective experiences with ANP implementation [39].

Participants and recruitment process

The participants were chosen through purposive sampling. Inclusion criteria were that participants should hold a nurse manager position in community healthcare and have had an ANP in their employment, in a separate ANP role, for at least one year. Seven nurse managers were found in 6 different municipalities, dispersed around the country.

The directors of health in the municipalities were contacted. Information about the study and requests for help contacting the nurse managers directly responsible for ANPs working in the municipality were sent per e-mail. The directors conveyed this e-mail to the nurse managers. Most of the nurse managers then contacted me directly to set up meetings. The others were contacted through follow-up e-mails.

All seven participants that were contacted for study inclusion agreed to participate. The sample consisted of nurses with several years of experience in a managing role. Six women and one male participated. The managers represented different sized departments and municipalities, ranging from one who served 80 elderly living in residential care homes to one who served a large municipality with almost 75.000 inhabitants and 1600 individual healthcare users.

Data Collection

To collect data from the participants, interviews were conducted. These were purposeful conversations based on a semi-structured interview guide with open-ended questions about the nurse managers' experiences and reflections on the implementation of the ANP role in their municipality. The interviews were conducted in each nurse manager's office, audio recorded and lasted between 45 minutes to 1 hour and 8 minutes.

Data analysis

All 7 interviews were transcribed verbatim digitally by myself, anonymizing simultaneously, removing names, places and other identifying information. Semantic thematic analysis as described by Braun V and Clarke V [40] was used to analyze the interviews. Semantic thematic analysis is the process of identifying and analyzing themes based on the actual data text and does not go further into underlying content to interpret or theorize the themes identified.

Thematic analysis, according to Braun V and Clarke V [40], is a process of 6 phases. The first phase involved familiarizing myself with the data corpus. The interviews were listened to, read and reread many times in search of patterns of meaning. During phase 2, initial codes were written alongside the text of the data corpus. After this, data extracts, which are individually coded blocks of data that have been identified and extracted from an individual interview [40], were collated and organized into meaningful groups. Phase 3 entailed further sorting and abstraction of data extracts into potential themes and subthemes. Phase 4 comprised of reviewing the identified themes, taking care to ensure that the data did not overlap between themes and that the data within each theme truly fit meaningfully into the theme. During phase 5, the essence of each theme was captured, and each theme title was defined and refined. For an example of the analysis process, see **TABLE 1**. Data extracts were translated from Norwegian to English before the final phase of analysis, phase 6, which involved the report write-up, adequately substantiating the selected themes with data extracts that vividly portray the essence of the themes.

Ethical considerations

The study has been notified to the Data Protection Official for Research, NSD - Norwegian Centre for Research Data before participants were recruited.

Participants were given written and oral information about the study before being asked to sign a declaration of consent before participation. All participants were promised anonymity and guaranteed confidentiality. Results were thematically generalized to achieve this.

The consolidated criteria for reporting qualitative research checklist (COREQ) was used to aid transparentizing the study [41].

FINDINGS

The interviews showed that although nurse managers described a few challenges experienced while implementing the ANP role, they primarily described advantages after the role was implemented.

The following sections present the themes identified through the analysis. These themes were: (1) Understanding and introducing the role, (2) Advancing the role: recognizing advantages, and (3) Advancing the role: facing resistance.

Understanding and introducing the ANP role

Before implementation, the interviewed nurse managers knew nothing about the ANP role and, thus, were not properly prepared for the execution of the role. One of the managers expressed this: *There were some challenges to begin with as to what she was going to do. It's like that when there is a new role. And you must be aware that there will be a period of frustration here. (No.1)*

One of the nurse managers expressed dissatisfaction about all the different advanced nursing curriculums emerging, saying that it was very difficult to keep up. She said that she didn't have time to read through all of them to know exactly what she should be looking for when hiring a new ANP, commenting how this prevented her from being proactive in the development of her service:

> *I see the gradual development now, where it is increasingly difficult for managers to, in a way, manage to keep up with the contents and development of the different study options, what the similarities and differences are. It is harder to be precise in the advertisements, if we were to advertise. […] It actually makes you less proactive in health care service development. (No. 2)*

Interviews showed that role unfamiliarity hindered ANPs being used optimally in the beginning. Sometimes ANPs weren't called in soon enough and therefore weren't able to catch the progression of illness early enough. Some nurse managers even registered resistance towards the ANPs. One manager mentioned that there might have been an element of jealousy amongst the rest of the staff because they didn't understand why the ANPs didn't have the same number of patients to see. In efforts to meet this challenge, much time was spent informing all levels of staff:

> *We had a few information rounds to the departments. What should the response team do, and what should the ordinary nurses do? What is their responsibility and their role? So now there isn't a problem anymore. […] It's like that when you introduce something new. (No.6)*

The interviews also showed that a lot of time was spent developing the role, trying to figure out what the ANP responsibilities should be. One manager was very clear in expressing that a nurse with a master's degree should not continue in the same position as before the added education. This manager felt it was important to work towards creating a new position where the ANP could maximize the use of her new qualifications: *I worked very hard so that our ANP could have her own job resource. This isn't something you can do on top of everything else. (No. 1)*

The nurse managers all mentioned that the ANP role required a certain personal suitability. The ANPs were characterized by their managers as humble nurses, not trying to prove themselves but genuinely trying to improve healthcare for patients. Many had worked in the municipality for years and were well known. They were described as sympathetic people with positive attitudes that were able to gain their co-workers trust and were able to work well interdisciplinary. The nurse managers all

mentioned that the ANP role required a certain personal suitability, noting that someone who was not so outgoing would not have been as successful:

> *I suppose that someone who chooses this education has an idea, a nursing idea, that others probably don't have. Being a nurse means many things. Some wish to continue being a nurse, but a better educated one. And I think these people are probably more reflective than those who are content just being an ordinary nurse. By all means, we need plenty of these. But I believe that there is a difference. Those who choose to further their education with a master's degree are genuinely interested. (No. 6)*

The nurse managers also described how the ANPs excelled at promoting their role, advising the managers as to the ANP qualifications and the purpose of the ANP role. They showed an active interest in role development, making suggestions, seeking tasks and going the extra mile. Nurse managers felt the ANPs were motivated during the implementation process. Their willingness to try different things was an advantage. Several nurse managers even expressed pride in the ANP's ability to stand strong through the stress of not having all the answers as to how the role would be developed, commenting that this required guts:

> *[The ANP] was very active, promoting what she had learned, what the meaning of the position was, what she was worried about, that if she didn't get to help others, or use what she had learned and teach others what she had learned, then she was worried that the municipality would lose something. (No. 7)*

Advancing the ANP role: Recognizing advantages

Although nurse managers described a few challenges related to understanding and introducing the ANP role, they were very positive when they spoke about the ANPs

they had in their employ. They described great respect for the level of competency that ANPs demonstrated and recognized that ANPs were more confident in their arguments. The nurse managers believed that the ANP's analytical and holistic approach was very different from a regular nurse approach, adding something new to their service, and were willing to allocate the time necessary to perform the role. When asked if there were disadvantages, none of the managers could mention any:

> *I only see advantages. I have never been so pleased with a clinical role before. It's about adding something new. It's about adding something new at a clinical level, like detailed assessment, time, evaluations, conversations, also with the patient's family, getting the whole picture in a way that is not possible in this fragmented everyday shiftwork we live in. (No. 2)*

The nurse managers saw the advantages the ANP's level of knowledge and clinical skills brought to their service. With the increased amount of elderly, they felt they needed this added competency, especially in dealing with the most complex patient cases. Several of the interviewed managers mentioned that patients were discharged earlier from the hospital than before, and that there wasn't enough room for them in nursing homes. These factors contributed to their appreciation of the ANP competency.

> *There's something about going in with a new perspective on patients, and having a good physical and clinical knowledge, right? So, she managed to catch things that hadn't been dealt with before. But, she didn't get the easy patients, she got the ones we felt were more complex, where we had a lot of questions, that the health service felt was difficult to assess and deal with. (No. 2)*

Many of the nurse managers agreed that an ANP had a special expertise in disease prevention. ANPs were appreciated because of their ability to carry out thorough

assessments that aided in discovering many things that previously would have gone on undetected. Their observation and assessment abilities, as well as their supreme understanding of context, helped prevent health decline by catching illness early. This in turn spared patient readmissions to hospital and postponed admission to nursing homes.

> *If we can manage to work well with prevention and discover things that are wrong, find out which patients might be dehydrated, constipated or have other problems not previously detected and can discover this in time to hinder a fall, then this is a huge benefit. Training our employees to observe and check, seeing the whole patient, would be an advantage that is difficult to measure. […] We actually see that there are a lot of nursing home candidates and that we are not working well enough with prevention. […] If you recognize illness before it progresses, and you can go in and stop it, postponing a nursing home admission for maybe a year, then this is a huge benefit. (No.7)*

One of the main responsibilities of the ANP was to contribute to increased co-worker competency. Most managers described using their ANPs to create plans for competency development and as instructors. ANPs were used to guide co-workers in difficult situations and help train them in challenging procedures.

> *I believe that you get the most of an ANP when she builds up her co-workers by sharing her competency with them, and not just working by herself. So, our ANP has spent a lot of time with competency planning, organizing and what we call clinical practical training. (No. 3)*

Nurse managers felt that ANPs were in a good position to help increase their co-worker's professionalism through coaching, mentoring, and teaching. This enabled all

the health care workers to work better, creating safer health care services for the elderly. Less mistakes were made.

According to some nurse managers, having ANPs on their service contributed to an increased sense of security in the rest of the staff. They felt that their staff always had someone to turn to if they were unsure of things. This also made it easier to recruit new nurses who might be afraid to work autonomously:

> *I feel the nurses feel very safe when they can contact [the ANP] all the time. And now I have, in conjunction with recruitment, spoken to quite a few newly graduated nurses, and they say they don't dare to start in home health care. You are there alone and suddenly… and at the hospital you have a doctor you can call, or go to, or a colleague. So, in this aspect, I believe, for recruitment, having this kind of professionalism and competency here adds to the feeling of security. Because she is more than a regular nurse. She knows a lot, and if she doesn't know something she goes and finds out. (No. 4)*

Several of the interviewed nurse managers expressed feeling that their service functioned better because of the ANP. This also helped them feel better about their own responsibilities. They felt that if they could leave the professional aspect to the ANPs then they could spend more time concentrating on management responsibilities. One manager expressed this specifically: *I am so happy to have her. Sometimes she is the reason I sleep at night, I tell you! With all that is going on with the severely ill patients. Moreover, because she handles the professional aspect of things, I can feel confident about what's going on. […] When my ANP is on the case, I can think about other things. (No. 4)*

Advancing the ANP role: Facing resistance

Some of the nurse managers described some resistance from the medical profession, due to the lack of understanding of the ANP role. These nurse managers felt that a better collaboration between the ANPs and the doctors would have increased the quality of their health care service. Several of the nurse managers said they had spent a lot of time trying to inform the doctors that the ANPs were not trying to take over their jobs.

> *The medical profession is a chapter in and of itself. Some are very positive, while others are more, like, I was about to say, afraid of too much interference, and don't like it when nurses suggest different things (No.6)*

However, most of the nurse managers described patient advantages of a good collaboration between their ANPs and the doctors in the municipality. They felt that doctors who were willing to collaborate with the ANPs were awarded a better foundation for evaluating patients. One nurse manager mentioned that consultations were more efficient when they used the ANP evaluations as a basis for the consultation.

> *When the doctors actually understand the ANP role, […] they can ask for specific observations, specific information […] and when [the ANPs] have seen the patients they write up a long summary about their observations in the electronic messaging system, and those doctors who choose to use these summaries have a completely different picture of the patient when they come in for a consultation. They have a lot more to build on. They can take a hold of very specific things. And some doctors have expressed that they think this is very, very good. (No. 6)*

The interviewed nurse managers were all concerned about the financial future of the municipalities. They continually asked themselves if they could afford to employ ANPs,

noting that their health care services had many other responsibilities that they could not neglect:

> *We know that that the everyday tasks are still there. You can't get rid of these. If you have 14 mornings cares, then these need to be taken care of. […] I've calculated that I can have 3 regular nurses for 2 ANPs. It's the same wages. […] I get more practical care from 3, then from 2. I must be honest about this. A morning care is a morning care. And the basics, the basics need to be taken care of no matter what. (No. 1)*

A common problem noted by most of the nurse managers was the continued reduction of health care budget. Most did not receive extra funds to support the ANP role and had to rearrange their budgets to finance the ANP. Though the managers believed in the ANP role, the added pressure of having to prioritize use of funds was described as difficult when they knew of so many other needs in the community.

> *It is hard to defend this kind of role when you are in the process of downsizing. […] It's even harder when everyone feels the world is catastrophic. So, in this way, especially when it is something new, it is harder to defend the value of the role to politicians. It is hard to show them that this will cost a bit more now, but in a little while we will earn it all back. (No. 2)*

One of the managers commented she experienced a lot of good intentions from upper management, but that a clear stance was lacking. She felt that when upper management hadn't mandated the implementation of the ANP role or allocated funds for the role, it was very difficult to prioritize the ANP role, noting that increased professionalism costs more:

I see the need [for an ANP] but we are constantly measured financially and professionally. So, I think, if this is going to happen at the expense of a temporary worker or an unskilled worker, then I would rather reduce the use of a temp to pay for the ANP. But, I must consider the municipalities priorities. If they want me to only hire unskilled workers, then this is something I must do. (No.5)

Simultaneously, nurse managers had experienced financial advantages which they had also worked on conveying to top management for more support in the development of the role. One manager said that it was not easy to see the financial benefits, that they weren't measurable, but that they were certain they were there.

[There is a financial value] to resources being used correctly. And if you use them correctly, preventing illness, then you avoid using a lot of resources on the patients, right? And of course, if patients can get well quicker, then they can take care of themselves quicker. But if you stay in bed longer because we don't catch the pneumonia, or it takes 3, 4, 5 days to catch the pneumonia then you use a lot of resources. So, I believe there is a financial benefit. Also, teaching, guiding those without knowledge makes [the unskilled workers] feel confident, and this also helps patients be able to live at home longer. (No. 5)

As this quote indicates, ill patients often require using more personnel resources, which in turn costs the municipality more money. Nurse managers felt that ANP's helped save money for the municipality by increasing the unskilled workers competence through teaching and thereby enhancing the quality of care given. They believed that increased quality of care was an intricate part of reducing patient decline. Readmissions to hospital were also reported to be largely avoided.

Many of the nurse managers felt that it was important to make the right decisions to avoid overspending. One nurse manager had decided that her ANP would work closely with intake coordinators to ensure the quality of decisions made:

> *I would advise that is it a good idea to connect the ANP to the intake coordinators. If we deliver services, the wrong services or the wrong services at the wrong time, then we do something that creates repetitive services that are extremely expensive for the municipality and that deprives people of functions and what they need. (No. 3)*

The nurse managers trusted ANP's judgement and felt their evaluations were good foundations for level of care. One manager expressed that she felt assured when long term care was initiated based on the ANP evaluation:

> *I always felt confident about those waiting for a spot in a nursing home. We never doubted that we gave a spot to the right patient if she had been there and made an assessment. Because it is a spot that is worth more than a million kroner a year, so how we use these resources is not insignificant. (No. 2)*

Nurse managers described the implementation process as a long and dynamic process, taking years to concretize the definition of the role. They allowed trial and error, recognizing that this was necessary for the evolvement of a new role. Some municipalities were still developing the role. Nurse managers in these municipalities felt that they might always be developing, evaluating and continuing the development of the APN role.

> *My experience is that it was a good idea to try and fail, and let things fall into place. […] And then evaluate. After a while you can evaluate again and adjust course when needed. (No.7)*

Despite these challenges, the experienced advantages of the ANP role spurred the nurse managers to work towards the development of the role:

> *I know that if you want to make something work, it requires time and patience. It requires staying strong in the struggle, being almost willing to die for it and still it might be that people can't understand it. (No. 3)*

DISCUSSION

The aim of this study was to explore and describe nurse managers' experiences related to the implementation of the ANP role in community health care in Norway.

The main finding was that although the nurse managers faced some challenges during implementation, they primarily experienced advantages to having implemented the ANP role in community health care. The advantages were predominately related to, both directly and indirectly, the increased competencies ANPs brought to community healthcare while the challenges were mainly associated with a lack of role clarity. These findings are congruent with previous international research about the ANP role [15, 42-45].

In this study, nurse managers described the introduction of ANP role as a long and dynamic process. This finding corresponds to the very nature of nursing which is also dynamic and constantly evolving [4]. The participants in this study said that it took some time both for them and their staff to understand what the ANP role entailed. This lack of role understanding was a challenge in that it initially led to colleague discordance and caused some challenges with interdisciplinary collaboration. This finding coincides with findings in previous studies [31, 45]. Studies have shown that some staff don't understand salary differences while others don't understand the task differences. Some don't understand the nursing aspect of the ANP role and align the

ANPs more towards the medical profession [29]. Several studies confirm that it takes time to develop good relationships between ANPs and other staff members who lack understanding of the role [29, 36]. In fact, lack of role clarity has been described as one of the major challenges of role development [2, 7, 12, 13, 34, 37, 45-47]. It is important to remember that when ANPs start in their new position, they are novices in their new role [48]. It can take from 6 months to 3 years to regain confidence, but it is also described as a role requiring lifelong learning [30, 31]. As the role develops, the responsibilities are refined and clarified [49]. Thus, in order to ease the introduction process, it is essential to inform other health care staff members in detail, repeatedly. Understanding creates the advantage of a better environment for collaboration, where each can take responsibility for their part in a team effort to provide the best patient care possible [37]. It has been suggested in a study done by Bing-Jonsson PC, Hofoss D, Kirkevold M, Bjark IT and Foss C [27] that role differentiation should be clearer. This would perhaps also aid in staff acceptance of the different responsibilities ANPs have.

It has been documented that the medical profession has had its doubts about the ANP role internationally and has opposed its development to some extent [5, 34]. The participants in this study also described some doctors as being oppositional towards the ANPs, however, the findings in this study showed that good collaborations between ANPs and physicians were evident when understanding was in place. They spoke of the advantages physicians had, in form of a better foundation for their consultations, when the ANP was involved. This shows that it is important to understand that collaboration between ANPs and physicians enhances teamwork, reduces the general workload and enhances the quality of care given [14, 31]. The ANP focus is not to take away responsibilities from the medical profession, but to assist in areas that haven’t been managed sufficiently [31]. This substantiates the assertion that it is essential to clearly

communicate the rationale behind the implementation of the ANP role to collaborating partners [45].

One of the nurse managers brought up the challenge of lack of standardized curriculum. This lack of standardization hindered this nurse manager from being pro-active in the development of her service. As do several other countries, Norway lacks regulatory legislation for the ANP role [12, 47, 50]. Several studies point out that a lack of regulation is a challenge during implementation as it undermines the legitimacy of the role and acts as a barrier to role development [11-13, 34, 46]. Regulation would help to standardize the role and its titles, reducing role confusion and enabling a better usage of the ANPs, while at the same time protecting the public by warranting a minimum level of quality [2, 10, 12, 47, 51]. Regulation would also aid educational facilities in standardizing their curricula framework and practice requirements [5]. A master's degree is recommended to meet international standards and enable international comparison [50]. Where previously master's degrees most often led to administrative or educational positions, the ANP master's degree leads to primarily clinical positions. This is an advantage for community healthcare [31] and reinforces the demand for clarity in role definitions and expectations, both for management and co-worker understanding but also for public understanding [45].

Several nurse managers in this study described certain personality traits that aided the process of role implementation, such as being humble, hard-working, sympathetic, positive and motivated. It is interesting to note that these findings coincide with previous international research. Jokiniemi K, Pietilä Am, Kylmä J and Haatainen K [46] have described ANP's as displaying strength and the ability to adapt to changes in the work-place. Other common qualities previously described are confidence, creativity, empathy and competence [15, 46]. Andregård A-C and Jangland E [31] described the

attitudes of the ANPs as pioneering spirits with a vision and a strong desire to push on. The nurse managers in this study also described their ANPs as eager and motivated in promoting their role, saying that this was an advantage in role development. Research confirms the importance of these characteristics, saying that they are instrumental in role development [48]. Motivation, confidence and a pioneering spirit are necessary to create momentum, yet it is also a great advantage when new ANPs enter their role with humility as they endeavor to achieve the best possible collaboration with the rest of the healthcare staff.

Nurse managers in this study described great advantages tied to incorporating ANP's competency in their healthcare service. The findings in this study showed that the ANPs had a higher level of competency than traditional nurses. Other studies have described ANPs as having a broader scope and a more autonomous role than both specialized and other nurses, contributing to a different patient approach [3, 36, 45, 52]. The ANPs in this study were described by the participants as having a holistic and analytical patient approach. Holism is a core value of nursing practice and this value is reiterated in the ANP role [2, 15, 36]. The holistic approach allows for a multi-dimensional focus on physical, psychological, social and practical issues [52]. These focus areas are the foundation of a comprehensive health assessment with a goal of maximizing the patient's quality of life and functional capacity [53]. The ANP's holistic approach has been shown to contribute to better patient assessments, thus improved clinical decisions leading to augmented health outcome advantages [52]. The participants that were interviewed in this study focused on increasing the quality of their health care services and prioritized the employment of APNs. According to Chavez KS, Dwyer AA and Ramelet AS [53], many studies concluded that ANP involvement in healthcare contributed to improvements in several patient related outcomes, such as functional

status, symptom screening, and medication reviews, thereby enhancing the quality of healthcare. Other positive outcomes related to ANP involvement in patient care are increased patient satisfaction, quality of life and decreased service utilization and length of stay [44, 54, 55].

The added clinical assessment skills the Norwegian ANPs displayed served as a cornerstone in their expertise in disease prevention. The advantage these skills brought was the ability to discover many symptoms and early signs of illness that previously would have gone undetected, thus contributing to the advantage of prevention of health decline and hospital admissions. Previous studies have also documented this ANP effect [54], stating even that hospital stays had tendencies to be shortened because of ANP healthcare involvement [6, 42, 43, 56, 57]. ANP involvement has also been known to contribute to a reduction of readmissions to hospitals compared to only traditional nurse involvement [56]. Specific health problems that ANP care and follow-up have had a positive effect on include depression, urinary incontinence, pressure ulcers, aggressive behavior, as well as achievement of patient ambulatory goals [44]. An Australian study by Clark S, Parker R, Prosser B and Davey R [42] stated that ANP involvement in patient care also improved quality of care in such areas as dementia, falls, and heart failure, as well as quality of life for patients by aiding in prevention of medication errors and hindering emergency room visits. ANP follow-up of patients with chronic illness has also been described as an advantage, leading to increased patient satisfaction [58]. Catching an illness before it progresses spares the patient, but also alleviates the pressure on the health resources available [31, 42].

The influx of geriatric patients due to the growing older population with increased prevalence of disease and comorbidities [59] escalates the need for broader perspectives and advanced clinical competencies [25, 26]. Bing-Jonsson PC, Foss C and Bjørk IT

[60] also describe a pressing need to develop nursing staff competency in Norway, stating that there is discord between the competency level expected in government policy documents and the competency found their research. Bing-Jonsson PC, Hofoss D, Kirkevold M, Bjark IT and Foss C [27] uncovered several areas of competency that need to be improved to achieve safe patient care in community healthcare. The participants in this study described experiencing the consequences of these demographic changes, agreeing that complexity of community healthcare has increased the demands on their nursing staff's geriatric competency. In attempts to expand this competency, the nurse managers charged their ANPs with this responsibility. The participants in this study believed that their ANPs sharing knowledge through coaching, guidance and instruction could improve the overall competency of their staff. Studies including ANPs in long term care have shown that ANPs, functioning as consultants and teachers, have improved evidence-based practice, thereby increasing staff competency [61, 62]. It is likely the same can be said of increasing staff competency in home healthcare as well.

Norway struggles to recruit qualified personnel to community care. As a result, nursing positions are being filled by unskilled workers. Unfortunately, this seems to contribute to diminished quality of care [28, 63]. This lack of qualified personnel also reinforces itself and recruitment becomes more challenging [63]. Thus, retainment of qualified personnel is increasingly important [64]. High staff turn-over, due to poor work satisfaction, is also described as a difficult issue in community healthcare. Work satisfaction is closely knit to the ability to complete tasks satisfactory [26]. The participants in this study described a recruitment advantage as a repercussion of the implementation of the ANP role. This study has shown that this advantage was a result of the support the ANPs offered the rest of the nursing staff. As previously stated, ANPs contribute to an added competency, both by having a higher level of competency

themselves and by sharing with their co-workers. This contributes to a higher level of professionalism in the service, thereby making it a more attractive place of work, stimulating recruitment and retainment of qualified personnel [50].

While the interviewed nurse managers were concerned with the need to recruit and retain personnel to maintain the quality of care their services could provide, they were also constantly having to make financial priorities. They described the difficulties in obtaining enough funds to support their efforts. Lack of funding is described as a hinderance to role development in multiple studies [12, 33, 45, 46, 49, 51]. Yet, concurrently, the ANP role is often implemented due to growing health costs and a desire for cost containment [11, 33, 47]. The challenge, it seems, is to gain the support from the necessary stakeholders. A study by Fagerström L and Glasberg Al [45] about the early ANP role in Finland found that a lack of understanding in the organization led to less funds and therefore an underutilization of the ANPs. Thus, it can be said that understanding the advantages and potential of the ANP role is of utmost importance for funding [29].

Nurse managers in my study claimed that hiring ANPs was an advantage in that it helped save the municipality money by preventing illness decline which would have otherwise required significant resources. The participants also appreciated the level of care recommendations made by their ANPs, saying this too spared the municipality of making incorrect expensive decisions. These advantages were not measured statistically, so the truth to the claims cannot be tested. Brooten D, Youngblut JM, Deosires W, Singhala K and Guido-Sanz F [56] maintain that it is important to consider ANP “dose effect” when evaluating outcomes, saying that there needs to be a significant amount of working ANPs to be able to judge an ANP outcome. Jokiniemi K, Haatainen K and Pietilä AM [12] has suggested that it might be difficult for countries

new to the ANP role to measure ANP outcomes statistically, possibly because of the inadequate amount (or dose) of functioning ANP roles. However, a study from 2009, *Effectiveness of Nurse Practitioners in nursing homes: a systematic review* [65], found that ANPs have had a positive effect on hospitalization rates and emergency room transfers of nursing home patients in countries where the role has existed over time. Martínez-González NA, Djalali S, Tandjung R, Huber-Geismann F, Markun S, Wensing M and Rosemann T [57] also found that NP-led care resulted in fewer hospitalizations, but also added that nurse-led care in general was associated with lower cost, lower mortality rates, and better quality of life. Since geriatric care encompasses the largest group in need of healthcare [33], it is cost effective to promote health for older persons. Hence, these studies can corroborate some of the claims made by the nurse managers in this study.

Implementation of the ANP role was described as a long process in which the interviewed nurse managers had to work hard to achieve success. Nurse managers play a tremendous role in facilitating change in healthcare services [2, 13]. Their leadership is essential to the formalization and legitimization of the ANP role [30]. Nurse managers' networking opportunities give them junctures to engage stakeholders, champion the role [37] and contribute to a better organizational understanding of the ANP role [15]. Nurse managers can mediate conflicting expectations [5], aid stakeholder acceptance [34], and lead staff towards successful collaboration [25]. Several Norwegian government documents state that it is crucial for nurse managers to cultivate quality improvements through using resources more efficiently, as well as working systematically towards increased competency and professional development [17, 19, 50]. Thus, it is vital that nurse managers are involved with the ANP

implementation process, focusing on the overall objectives, supporting staff and working with the whole team to develop sustainable goals moving forward.

Limitations

The sampling consisted of only 7 participants. This relatively small sample, though common in qualitative studies, may have excluded findings that more participants could have offered. However, during analysis a certain data saturation was discovered as the findings were mainly congruent [66].

Receiving a request from their director to participate in a study may have added undue pressure on the participants to accept, creating an ethical dilemma. It is possible that the nurse managers interviewed therefore only focused on the advantages of the ANP role in an effort to represent the municipality in the most positive manner since their directors knew they were involved in the study. Contact with the participants conducted differently might have given different findings.

As an ANP student, I am expectedly influenced by my preconceptions as to the advantages of the ANP role. If I didn't believe there were advantages I would not have pursued this master's degree. My preconceptions are likely to have colored my analysis of the data to focus on the advantages that were described while not focusing on the potential negative sides of having an ANP in employment. Still, when asked to share their experiences, all the interviewed managers predominantly focused on the advantages and expressed that they were all avid supporters of the ANP role.

CONCLUSION

This study is a contribution towards mapping the Norwegian ANP role as a part of global ANP development as well as serving as a foundation for further development of the Norwegian ANP role in Norway.

This study has shown that nurse managers experienced that an initial lack of understanding about the advantages of an ANP role in community healthcare generated challenges and affected collaboration with staff, physicians and stakeholders. However, this study primarily highlights nurse managers experiences of advantages brought to their health services by the implementation of the ANP role.

This study has shown the necessity of documenting role description and spreading this information to essential collaborators. It is also necessary to generally inform to aid universal acceptance. Nurse managers play a pivotal part in the further development of ANP roles in Norway as advocates for the ANP role.

Implications for further research

This is one of the first studies to study nurse managers experiences with implementations of the ANP role in Norway, as the ANP role is still very new.

To further the understanding of ANP advantages and challenges and thereby increasing the knowledge of the ANP role in Norway, additional research exploring the community healthcare's top management experiences in relation to these issues is needed. It would also be beneficial to research how co-workers and patients experience this new role, as well as measuring specific outcomes statistically.

LIST OF ABBREVIATIONS

ANP: advanced nursing practitioner

GNP: geriatric nurse practitioner

DECLARATIONS

Ethics approval and consent to participate

Not applicable

Consent for publication

Not applicable

Availability of data and material

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contribution

AØ conducted the interviews, analyzed the data and wrote up the report.

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2 KAPPE

2.1 Introduction

In this section, I will briefly summarize the article presented in section one. Some of the topics will be slightly expanded to explain issues not discussed in the article. However, the overall aim of this section is to explore how Callista Roy's conceptual adaption model for nursing can be used to further understand the nurse managers experiences of advanced competency brought to the community healthcare through the implementation of the ANP role.

2.2 Background

Sister Callista Roy started to develop the Roy Adaption Model (RAM), a conceptual framework for nursing, as a master's level student in 1964. Throughout the years since then, her adaption model has been refined. It has become one of the most influential frameworks for the profession of nursing and is currently used by nurses worldwide (Masters, 2015) .

The RAM is a detailed and complex definition of nursing with many intertwined elements. Philosophically, the RAM is built on 2 main concepts; humanism and "veritivity". Humanism values the person as a whole and creative being with purpose, striving to maintain integrity. "Veritivity" is a term coined by Roy meaning that a person has a purpose for existence and that life is valuable and meaningful. Scientifically, the RAM is built on Bertalanffy's general systems theory and Helson's adaption-level theory. The systems theory describes the person as a whole built of many interdependent parts that function in unity. Control mechanisms are important for human function. Stimuli and responses are the inputs and outputs of the system. The adaption-level theory is the foundation of understanding the person as an adaptive system, with the ability to respond to external and internal stimuli. A person's adaption level represents their ability to respond positively in a specific situation. (Roy & Andrews, 1991)

The environment is constantly changing and stimulating the person to adapt (Roy & Andrews, 1991). The goal of nursing is to promote a person's successful adaption (Butts & Rich, 2015). Adaption is a process where an individual responds to

confronting stimuli in a way that leads to integrity, thus leading to optimal health and well-being, quality of life and to death with dignity (Masters, 2015).

The subject of nursing is most often an individual biophysical human being. However, Roy has also incorporated groups such as communities and societies in the definition of person (Roy & Andrews, 1991). Likewise, the definition of environment too is expanded to include "all conditions, circumstances and influences that surround and affect the development and behaviour of people as adaptive systems with particular consideration of human and earth resources" (Roy, Whetsell, & Frederickson, 2009).

The beginning of the article in section one described the need for nursing to adapt to altered healthcare contexts. Introduction of the ANP role in community health care may be a contribution in achieving this adaption. Therefore, the aim of this section is to give an example of how the findings described in the article can be further understood through the RAM.

2.3 Research design and methods

A qualitative descriptive design was used in this study to explore nurse manager experiences with the implementation of the ANP role. Semi-structured interviews were conducted with seven nurse managers in community healthcare. Thematic analysis, as described by Braun and Clarke (2006), was used to analyze the data.

A pragmatic research approach was chosen for this study. A pragmatic research approach, which is not the same as the philosophy of pragmatism, aims to describe experiences and circumstances from the researcher's analytical viewpoint. To find answers to research questions, a researcher adopting a pragmatic stance may use a plethora of methods, choosing the ones that are most practical. It is therefore important to clearly present the chosen methods and arguments for these methods (Savin-Baden & Major, 2013). See article, page 9, for more details.

Pragmatism claims that knowledge is derived through actions and the experienced results of these actions (Ormerod, 2005). Ideas and theories are evaluated by the consequences experienced when acting on these ideas. These ideas and actions continue to influence each other in a circular process until the beliefs are confirmed (Glasgow, 2013; Morgan, 2014). Yet even though a belief may be confirmed at a time, this

knowledge is not infallible and can still be subject to change again as new ideas and new actions come in to play (Morgan, 2014).

This description of pragmatism matches the description of the implementation of the ANP role. I defined "implementation" in purely practical terms as "*the act of putting into effect"* (Dictionary.com Unabridged, 2018) and "role" is defined simply as "*a function or position"* (The American Heritage dictionary of the English language, 2018). The implementation process was also a circular process, where ideas were tested practically, evaluated and where practice shifted course accordingly. Challenges and advantages are products of an evaluation of results from actions taken. Therefore, pragmatism as a philosophy and a pragmatic research approach are easily incorporated in the quest to describe how nurse managers experienced the implementation of the ANP role in Norway.

2.3.1 Ethical considerations

The risk of harm for the participants was minimal when participating in this study. The participants did not come from a vulnerable group. They were all competent individuals. There were no language barriers, though one participant did not have Norwegian as their first language. The participants were informed in writing before the study started, as well as verbally, before the interview started. All participants were treated with respect and their voices were endeavored to be portrayed truthfully. The topic of the study was not a sensitive one, yet the information gathered was potentially beneficial to others considering implementing the ANP role. (Polit & Beck, 2017)

The study has been notified to the Data Protection Official for Research, NSD - Norwegian Centre for Research Data before participants were recruited. The directors of health in the municipalities also gave their approval for their subordinate's participation in the study by conveying contact. See article for more information about these issues.

2.4 Findings

This study has shown that nurse managers experienced an initial lack of understanding about the advantages of an ANP role in community healthcare which generated challenges and affected collaboration with staff, physicians and stakeholders. However,

this study primarily highlights nurse managers' experiences of advantages brought to their health services by the implementation of the ANP role. These advantages included prevention of patient health decline and disease progression through thorough clinical assessments, increased staff competency through instruction, and increased level of professionalism in the service. This seemed to stimulate recruitment and retainment of personnel, and better assessments for level of care which contributed to cost containment for the health services the ANPs were a part of. The findings are congruent with previous international research about the ANP role. For more information about the findings in this study, see the article.

2.5 Discussion

The study presented and discussed in the article described the experiences nurse managers had related to the implementation of ANP roles in community healthcare. The main findings are described above and in the article. In this discussion, the findings pertaining to the advantages of increased APN competency, contributing to an increased quality of care, will be organized according to how they correlate to the different aspects of the RAM. In the context of the RAM, I propose that the adaptive system discussed here is the community healthcare services of the interviewed nurse managers.

In her article Extending the Roy Adaption Model to Meet Changing Global Needs, Roy (2011) describes a further development of the RAM based on significant global changes happening during this century, requiring new knowledge. Healthcare contexts are altered globally, for example through an increased elderly population with an increased complexity in healthcare needs. Yet, the nursing mandate remains the same, to meet emerging health needs with knowledge-based practice.

Nursing activity is aimed at promoting adaption by manipulating stimuli. (Roy & Riehl, 1980) The nursing process starts with the assessment of responses to stimuli and the stimuli itself before confirming the adaption status and planning goals in relation to promoting adaption. Nursing intervention consists of attempts to change the focal stimuli and enhance coping mechanisms (Butts & Rich, 2015). The last step in the nursing process is to evaluate the effectiveness of the nursing intervention towards adaption through the responses displayed by the person, thus reassessing the need to further manipulate stimuli (Roy & Andrews, 1991).

There are 3 types of stimuli; focal, contextual and residual. Focal stimuli are those that confront a person directly and require immediate response. Contextual stimuli are stimuli that aren't in direct focus, but that nonetheless influence a person. Residual stimuli are factors in the environment whose influence on the individual aren't measurable. The responses to stimuli are either effective or ineffective and contribute to or hinder adaption. A person's coping mechanisms influence the level of adaption, either integrated, compensatory or compromised. At a compensatory level of adaption, mechanisms are in place to attempt reintegration. Inadequate responses to stimuli lead to compromised adaption, demanding nursing intervention.

The two types of coping mechanisms used to achieve adaption are called the regulatory subsystem and the cognator subsystem (Meleis, 1997). The regulatory subsystem is an automatic, unconscious and biological response. The cognator subsystem is related to perception, learning, judgement and emotion. Responses to stimuli are processed through these subsystems in four adaptive modes; physiological, self-concept, role function and interdependence. The physiological mode pertains to physical responses to stimuli and the need for physiologic integrity. The self-concept mode pertains to psychological integrity and the need to know who one is to enable a sense of purposefulness in life. The role function mode pertains to social integrity and focuses on the persons role in a group. The interdependence mode pertains to relational integrity and focuses on the basic need to feel security in nurturing relationships. Both the subsystems and the adaptive modes must be viewed as a whole (Roy & Andrews, 1991).

When considering the four adaptive modes related to a group instead of an individual, certain other aspects are emphasized. Adaption in the physical mode pertains to the groups basic operating resources such as the group participants, the physical environment and finances. In the physical mode, the need for strategic planning and adequate resources is essential. The self-concept mode is called group identity mode when pertaining to groups and, as the name implies, the fundamental need is group identity integrity. Four subcomponents to this mode include interpersonal relationships, group self-image, social milieu and group culture. The role function mode in a group setting pertains to the functions of the group members such as managers and staff. Here the basic need is to know who the participants of the group are in relation to the others

in the group (Butts & Rich, 2015). The group interdependence mode pertains to the basic need for relational adequacy. The group's social context and infrastructure is important, as is the participant's personal traits, knowledge, abilities and attitudes (Roy, 2011).

To achieve adaption as a group, control mechanisms are used instead of coping mechanisms. The control mechanisms are organized into two subsystems, the stabilizer and the innovator subsystems. The stabilizer subsystem pertains to "systems maintenance involving structures, values, and daily activities to fulfil the purpose of the social system" (Butts & Rich, 2015, p. 412). The innovator subsystem pertains to individuals in the group and "encompasses structures and processes associated with personal change and growth within social systems" (Butts & Rich, 2015, p. 413)

Step one of the nursing process requires an assessment of behavior or responses to stimuli as an indication of the adaption level and need for nursing intervention. In order to meet expectations concerning quality of care, a certain level of competency is required. As Bing-Jonsson, Foss, and Bjørk (2016) describe, there is an expectation of more competency than what is actually found in the communities in Norway. Thus, a possible identified maladaptive community healthcare response to changes in society, described in the background of the article, could be a competency gap. Since the community health care services in this study, led by the interviewed nurse managers, have implemented the ANP role and are thereby attempting to close the competency gap, it can be said that these services have a compensatory adaption level. An intervention is in place, and an integrated adaption is possibly on the way. Therefore, further assessment of the healthcare services responses to the intervention of ANP implementation must be carried out.

Looking at community healthcare's response in the physiological mode during the initial implementation phase, it can be said that there was an insufficient strategic planning and inadequate resources to promote integrity pertaining to basic operating resources. There may have been strategic planning nationally, as described in government documents, but nurse managers described a lack of planning ANP roles before implementation. They also described challenges concerning funding the ANP role, implying that the ANP role was presumed expensive. The nurse managers expressed that there were attempts of cost containment on all levels. This implies that

there still is a general lack of funding which could be understood as a maladaptive response to the implementation of ANP role.

When considering responses concerning the ANPs in the group identity mode, the basic need is group identity integrity. This relates to how the community healthcare perceives itself as a united group, whether it sees itself as honest and complete. Nurse managers allude to the possible maladaptive responses in this mode when mentioning initial issues pertaining to staff acceptance. Good collaboration is important in creating a supportive group culture and positive morale.

In the role function mode, the most important issue is role clarity. A large part of the article describes nurse managers experiences of a lack of role clarity when pertaining to the APN's working in community health care. If the members of the group do not understand what each role entails, and each's responsibilities are unclear, collaboration efforts towards the goal of increased quality of care can be diminished. This could mean that several group participants attempt to fulfill the same responsibilities, leaving other responsibilities uncovered, thereby diminishing the quality of care. If certain participants are not allowed to function at full capacity, certain needs in the community may not be met, or be met insufficiently.

Assessment of responses in the interdependence mode pertains to the need for relational adequacy. Adaptive responses are characterized by good relationships with other groups, such as patient groups, hospital staff, municipality doctors. A breach in good relationship with any of these can indicate maladaptive responses. Some nurse managers described certain collaboration challenges between ANPs and the physicians in the municipalities. These challenges could be preventing an adaptive response to the implementation of the ANP role, but as told by the managers, an improved understanding of the ANP role led to better collaboration.

Continuing to step two in the nursing process, external and internal stimuli affecting the maladaptive response in each mode are identified and assessed and an effort to answer the question of why responses are maladaptive is pondered. The following descriptions are not exhaustive results, but examples of stimuli found in the text.

In the physical mode, the focal stimulus can be understood as, first and foremost, the lack of resources. Thus, lack of funding can be understood as both a response and a

stimulus. Contextual stimuli could be lack of plans influencing further development of the ANP role. In the group identity mode, a focal stimulus is relationships between staff. These relationships can influence the implementation of the ANP role by either showing support for each other in the development of the role or resisting teamwork attempts. Staff jealousy can prevent the service from functioning as one and could, as such, be construed as an internal contextual stimulus. In the role function mode, a focal stimulus such as the lack of role clarity can contribute to the ANP role not being utilized optimally. In the final mode, the interdependence mode, a focal stimulus can be said to be the role expectations physicians have of nurses, also hindering the optimal utilization of ANPs.

Step 3 of the nursing process according to the RAM is setting a nurse diagnosis. In summary of the previous paragraphs, despite adaptive responses such as those related to positive collaboration efforts within and outside the group, the multiple maladaptive responses described could suggest a possible insufficient implementation of the ANP role, demanding further intervention. Thus, the nursing diagnosis might be that the implementation of the ANP role as a response to an identified competency gap in community healthcare is not optimal due to lack of funding, insufficient staff acceptance, lack of role clarity or inadequate collaboration.

Goal setting is the fourth step of the nursing process. As an ANP, my goal for community healthcare would be adaptive responses in shape of acceptance of ANPs and optimal use of ANPs.

When deciding a nursing intervention, it is important to choose which stimuli or control process to attempt to manipulate. Some specific interventions might involve stimulating the community healthcare's innovator and stabilizer control subsystems. In the innovator subsystem, an attempt can be made to change the structure of community healthcare to encompass the ANP role just as it encompasses other staff roles, thereby influencing the process of acceptance. This would emphasize the importance of a separate, clearly defined ANP role, as stated by one of the nurse managers in the study. Manipulating the stabilizer subsystem by strengthening the value of competency might also aid in an adaptive response towards the implementation of the ANP role. The stimulus of lack of role clarity can be manipulated through detailed information aimed at collaborators and society in general, contributing towards both increased acceptance and more optimal use of the APNs. An important stimulus in the process of developing

the ANP role is funding. It is clear that nursing should try to manipulate this stimulus, though it is not easy. Nurse managers in the study in the article have attempted to influence stakeholders to ease the implementation process. Perhaps the article can contribute to this influence?

The final step of the nursing process according to the RAM is evaluation. The study described in the article describes some positive outcomes (advantages) nurse managers experienced related to having implemented the ANP role. These advantages reinforce the adaptive response of acceptance of the ANP role in community healthcare, thus contributing towards increased competency meeting the evolving health needs in the community.

2.6 Conclusion

Just as pragmatism involves testing theory through action, so does the nursing process according to the RAM. The nursing process according to the RAM is a circular one and all the aspects are intertwined, influencing each other. Manipulating one stimulus may affect another stimulus. While achieving an adaptive response in one mode, another mode may be influenced demanding a new nursing intervention. It is difficult, within the limitations of this paper, to fully assess the complex nature of implementing the ANP role as an effort to meet competency problems in community healthcare. This section has been an attempt to show that Callista Roy's conceptual model for nursing can be applied to community healthcare as a group and that the nursing process can aid in deciding important nursing interventions as well as aid in the evaluation of ANPs as an answer to closing the competency gap, confirming the perceptions nurse managers shared in the study described in the article.

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Tables

Table 1: Data analysis process example

Data extract	Code	Sub-theme	Theme
[The APN's] have the clinical bit that they are trained in. Regular nurses don't have this, and neither do the nurses with for example further education in geriatric assessment. So, I see a clear advantage to having an APN. (No. 6)	Useful APN competency	Recognizing advantages	Advancing the role
My experience is that an APN is more confident in her arguments. I feel that the analytical approach and the total approach to, for example frail elderly, is different than a regular nurse in home health care has, generally speaking. (No. 3)			
She is an advanced nurse, yes she is. And clearly she speaks better with patients than many doctors do. (No.1)			
I believe that [the APN] has prevented a lot of fates that could have gone wrong, preventing hospital admissions by being there, assessing, seeing. (No.4)	Improved healthcare services		
We have some assistants. They are very. [...] The APN has had som classes with them, and they get pretty advanced instruction. [...] It is possible to make an assistant good. (No.1)			
She does a lot of assessments. First to assess what the needs are, and then to see how we can be proactive instead of waiting to see what happens. To see what we can prevent and what we can to better, how we can contribute to patients getting better quicker, and to evaluate which measures should be taken. (No.5)			

Annexes

Annex 1: BMC author guidelines copied from:
https://bmcnurs.biomedcentral.com/submission-guidelines and
https://bmcnurs.biomedcentral.com/submission-guidelines/preparing-your-manuscript

Annex 2: Information letter (in Norwegian)

Annex 3: Approval letter from NSD (In Norwegian)

Annex 4: Interview guide (in Norwegian)

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Examples of the BioMed Central reference style are shown below. Please ensure that the reference style is followed precisely; if the references are not in the correct style, they may need to be retyped and carefully proofread.

Web links and URLs: All web links and URLs, including links to the authors' own websites, should be given a reference number and included in the reference list rather than within the text of the manuscript. They should be provided in full, including both the title of the site and the URL, as well as the date the site was accessed, in the following format: The Mouse Tumor Biology Database. http://tumor.informatics.jax.org/mtbwi/index.do. Accessed 20 May 2013. If an author or group of authors can clearly be associated with a web link, such as for weblogs, then they should be included in the reference.

Authors may wish to make use of reference management software to ensure that reference lists are correctly formatted.

Example reference style:

Article within a journal

Smith JJ. The world of science. Am J Sci. 1999;36:234-5.

Article within a journal (no page numbers)

Rohrmann S, Overvad K, Bueno-de-Mesquita HB, Jakobsen MU, Egeberg R, Tjønneland A, et al. Meat consumption and mortality - results from the European Prospective Investigation into Cancer and Nutrition. BMC Med. 2013;11:63.

Article within a journal by DOI

Slifka MK, Whitton JL. Clinical implications of dysregulated cytokine production. Dig J Mol Med. 2000; doi:10.1007/s801090000086.

Article within a journal supplement

Frumin AM, Nussbaum J, Esposito M. Functional asplenia: demonstration of splenic activity by bone marrow scan. Blood 1979;59 Suppl 1:26-32.

Book chapter, or an article within a book

Wyllie AH, Kerr JFR, Currie AR. Cell death: the significance of apoptosis. In: Bourne GH, Danielli JF, Jeon KW, editors. International review of cytology. London: Academic; 1980. p. 251-306.

OnlineFirst chapter in a series (without a volume designation but with a DOI)

Saito Y, Hyuga H. Rate equation approaches to amplification of enantiomeric excess and chiral symmetry breaking. Top Curr Chem. 2007. doi:10.1007/128_2006_108.

Complete book, authored

Blenkinsopp A, Paxton P. Symptoms in the pharmacy: a guide to the management of common illness. 3rd ed. Oxford: Blackwell Science; 1998.

Online document

Doe J. Title of subordinate document. In: The dictionary of substances and their effects. Royal Society of Chemistry. 1999. http://www.rsc.org/dose/title of subordinate document. Accessed 15 Jan 1999.

Online database

Healthwise Knowledgebase. US Pharmacopeia, Rockville. 1998. http://www.healthwise.org. Accessed 21 Sept 1998.

Supplementary material/private homepage

Doe J. Title of supplementary material. 2000. http://www.privatehomepage.com. Accessed 22 Feb 2000.

University site

Doe, J: Title of preprint. http://www.uni-heidelberg.de/mydata.html (1999). Accessed 25 Dec 1999.

FTP site

Doe, J: Trivial HTTP, RFC2169. ftp://ftp.isi.edu/in-notes/rfc2169.txt (1999). Accessed 12 Nov 1999.

Organization site

ISSN International Centre: The ISSN register. http://www.issn.org (2006). Accessed 20 Feb 2007.

Dataset with persistent identifier

Zheng L-Y, Guo X-S, He B, Sun L-J, Peng Y, Dong S-S, et al. Genome data from sweet and grain sorghum (Sorghum bicolor). GigaScience Database. 2011. http://dx.doi.org/10.5524/100012.

Preparing figures

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When preparing figures, please follow the formatting instructions below.

- Figures should be provided as separate files, not embedded in the main manuscript file.
- Each figure of a manuscript should be submitted as a single file that fits on a single page in portrait format.
- Tables should NOT be submitted as figures but should be included in the main manuscript file.
- Multi-panel figures (those with parts a, b, c, d etc.) should be submitted as a single composite file that contains all parts of the figure.
- Figures should be numbered in the order they are first mentioned in the text, and uploaded in this order.
- Figures should be uploaded in the correct orientation.
- Figure titles (max 15 words) and legends (max 300 words) should be provided in the main manuscript, not in the graphic file.
- Figure keys should be incorporated into the graphic, not into the legend of the figure.
- Each figure should be closely cropped to minimize the amount of white space surrounding the illustration. Cropping figures improves accuracy when placing the figure in combination with other elements when the accepted manuscript is prepared for publication on our site. For more information on individual figure file formats, see our detailed instructions.
- Individual figure files should not exceed 10 MB. If a suitable format is chosen, this file size is adequate for extremely high quality figures.
- **Please note that it is the responsibility of the author(s) to obtain permission from the copyright holder to reproduce figures (or tables) that have previously been published elsewhere.** In order for all figures to be open access, authors must have permission from the rights holder if they wish to include images that have been published elsewhere

in non open access journals. Permission should be indicated in the figure legend, and the original source included in the reference list.

Figure file types

We accept the following file formats for figures:

- EPS (suitable for diagrams and/or images)
- PDF (suitable for diagrams and/or images)
- Microsoft Word (suitable for diagrams and/or images, figures must be a single page)
- PowerPoint (suitable for diagrams and/or images, figures must be a single page)
- TIFF (suitable for images)
- JPEG (suitable for photographic images, less suitable for graphical images)
- PNG (suitable for images)
- BMP (suitable for images)
- CDX (ChemDraw - suitable for molecular structures)

For information and suggestions of suitable file formats for specific figure types, please see our author academy.

Figure size and resolution

Figures are resized during publication of the final full text and PDF versions to conform to the BioMed Central standard dimensions, which are detailed below.

Figures on the web:

- width of 600 pixels (standard), 1200 pixels (high resolution).

Figures in the final PDF version:

- width of 85 mm for half page width figure
- width of 170 mm for full page width figure
- maximum height of 225 mm for figure and legend
- image resolution of approximately 300 dpi (dots per inch) at the final size

Figures should be designed such that all information, including text, is legible at these dimensions. All lines should be wider than 0.25 pt when constrained to standard figure widths. All fonts must be embedded.

Figure file compression

- Vector figures should if possible be submitted as PDF files, which are usually more compact than EPS files.
- TIFF files should be saved with LZW compression, which is lossless (decreases file size without decreasing quality) in order to minimize upload time.
- JPEG files should be saved at maximum quality.
- Conversion of images between file types (especially lossy formats such as JPEG) should be kept to a minimum to avoid degradation of quality.

If you have any questions or are experiencing a problem with figures, please contact the customer service team at info@biomedcentral.com.

Preparing tables

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When preparing tables, please follow the formatting instructions below.

- Tables should be numbered and cited in the text in sequence using Arabic numerals (i.e. Table 1, Table 2 etc.).
- Tables less than one A4 or Letter page in length can be placed in the appropriate location within the manuscript.
- Tables larger than one A4 or Letter page in length can be placed at the end of the document text file. Please cite and indicate where the table should appear at the relevant location in the text file so that the table can be added in the correct place during production.
- Larger datasets, or tables too wide for A4 or Letter landscape page can be uploaded as additional files. Please see [below] for more information.
- Tabular data provided as additional files can be uploaded as an Excel spreadsheet (.xls) or comma separated values (.csv). Please use the standard file extensions.
- Table titles (max 15 words) should be included above the table, and legends (max 300 words) should be included underneath the table.
- Tables should not be embedded as figures or spreadsheet files, but should be formatted using 'Table object' function in your word processing program.
- Color and shading may not be used. Parts of the table can be highlighted using superscript, numbering, lettering, symbols or bold text, the meaning of which should be explained in a table legend.
- Commas should not be used to indicate numerical values.

If you have any questions or are experiencing a problem with tables, please contact the customer service team at info@biomedcentral.com.

Preparing additional files

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As the length and quantity of data is not restricted for many article types, authors can provide datasets, tables, movies, or other information as additional files.

All Additional files will be published along with the accepted article. Do not include files such as patient consent forms, certificates of language editing, or revised versions of the main manuscript document with tracked changes. Such files, if requested, should be sent by email to the journal's editorial email address, quoting the manuscript reference number. Please do not send completed patient consent forms unless requested.

Results that would otherwise be indicated as "data not shown" should be included as additional files. Since many web links and URLs rapidly become broken, BioMed Central requires that supporting data are included as additional files, or deposited in a recognized repository. Please do not link to data on a personal/departmental website. Do not include any individual participant details. The maximum file size for additional files is 20 MB each, and files will be virus-scanned on submission. Each additional file should be cited in sequence within the main body of text.

If additional material is provided, please list the following information in a separate section of the manuscript text:

- File name (e.g. Additional file 1)
- File format including the correct file extension for example .pdf, .xls, .txt, .pptx (including name and a URL of an appropriate viewer if format is unusual)
- Title of data
- Description of data

Additional files should be named "Additional file 1" and so on and should be referenced explicitly by file name within the body of the article, e.g. 'An additional movie file shows this in more detail [see Additional file 1]'.

For further guidance on how to use Additional files or recommendations on how to present particular types of data or information, please see How to use additional files.

Annex 2: Information letter (in Norwegian)

Forespørsel om deltakelse i forskningsprosjektet

" Å forstå potensielle muligheter for videre utvikling av avanserte sykepleie roller i kommunehelsetjenesten i Norge; et ledelses perspektiv. "

Bakgrunn og formål
En ny sykepleierolle, avansert geriatrisk og avansert klinisk sykepleier, er i ferd med å bli implementert i det norske helsevesenet. Selv om det ligger nasjonale føringer for å utvikle denne rollen i blant annet Stortingsmelding 26, er det ikke helt klart hva rollen innebærer, hvordan rollen skal organiseres, hvilke behov i helsetjenesten rollen skal dekke og hvilke ansvar sykepleieren skal ha.

Formålet med dette forskningsprosjektet, som er en mastergrads-studie ved Høyskolen i Sør-Øst Norge, er å utforske og beskrive organisering, arbeidsoppgaver og praksis modeller for avanserte geriatriske sykepleiere (AGS) i kommunehelsetjenesten sett fra et ledelses perspektiv. Kunnskap om lederes erfaringer med implementering av rollen og hvilke hindringer og muligheter de har møtt underveis er viktige for videre utvikling og implementering av rollen andre steder.

Deltagerne i dette prosjektet er ledere som har hatt lederansvar for en avansert geriatrisk sykepleier i minst 1 år. Du er kontaktet på bakgrunn av informasjon om at du har lederansvar for en avansert geriatrisk sykepleier.

Hva innebærer deltakelse i studien?
Deltagelse i denne studien innebærer at jeg ønsker å intervjue deg om dine erfaringer som leder for en avansert geriatrisk sykepleier. Intervjuet vil ta ca. 45 minutter og bli tatt opp på lydbånd. Spørsmålene vil omhandle hvilke roller, arbeids- og ansvarsområder avansert geriatrisk sykepleier i din virksomhet har, hvordan rollen er organisert og hva du som leder har erfart som hemmende og fremmende i arbeidet med å implementere og utvikle denne rollen.

Hva skjer med informasjonen om deg?
Resultatene vil bli publisert i form av en masteroppgave. Det kan også være aktuelt å publisere en vitenskapelig artikkel fra arbeidet.

Personopplysninger som samles inn om deg vil bli behandlet konfidensielt og det vil kun være jeg som har tilgang til disse. Personopplysningene vil bli anonymisert. Det etterstrebes at deltagerne ikke er gjenkjennbare i den ferdige oppgaven og eventuell publikasjon. Lydfilene vil lagres på passord-beskyttet datamaskin og på HSN sin forskningsserver.

Prosjektet avsluttes innen 1. Januar, 2019. Lyd opptak av intervju og koblingsnøkkel vil da bli destruert. Samlet datamateriale vil være anonymisert og lagret på forskningsdatabasen på Høyskolen i Sørøst Norge for bruk i eventuell vitenskapelig publisering.

Frivillig deltakelse
Det er frivillig å delta i studien, og du kan når som helst trekke ditt samtykke uten å oppgi noen grunn. Dersom du trekker deg, vil alle opplysninger om deg bli slettet. Ettersom personopplysninger vil bli anonymisert under arbeidet vil det imidlertid ikke være anledning til å trekke seg etter at selve intervjuet er gjennomført.

Dersom du ønsker å delta eller har spørsmål til studien, ta kontakt med student Abiel Øvrebø, tel. 911 83 799 eller e-post: Abiel.Ovrebo@student.hbv.no. Veileder for studien er Linn Hege Førsund, e-post: Linn.Hege.Forsund@usn.no

Studien er meldt til Personvernombudet for forskning, NSD - Norsk senter for forskningsdata AS.

Samtykke til deltakelse i studien

Jeg har mottatt informasjon om studien, og er villig til å delta

---
(Signert av prosjektdeltaker, dato)

Annex 3: Approval letter from NSD (In Norwegian)

Linn Hege Førsund

3603 KONGSBERG

Vår dato: 13.11.2017	Vår ref: 56828 / 3 / BGH	Deres dato:	Deres ref:

Forenklet vurdering fra NSD Personvernombudet for forskning

Vi viser til melding om behandling av personopplysninger, mottatt 26.10.2017.
Meldingen gjelder prosjektet:

56828	*Å forstå potensielle muligheter for videre utvikling av avanserte sykepleie roller kommunehelsetjenesten i Norge; et ledelses perspektiv.*
Behandlingsansvarlig	*Høgskolen i Sørøst-Norge, ved institusjonens øverste leder*
Daglig ansvarlig	*Linn Hege Førsund*
Student	*Abiel Øvrebø*

Vurdering

Etter gjennomgang av opplysningene i meldeskjemaet med vedlegg, vurderer vi at prosjektet er omfattet av personopplysningsloven § 31. Personopplysningene som blir samlet inn er ikke sensitive, prosjektet er samtykkebasert og har lav personvernulempe. Prosjektet har derfor fått en forenklet vurdering. Du kan gå i gang med prosjektet. Du har selvstendig ansvar for å følge vilkårene under og sette deg inn i veiledningen i dette brevet.

Vilkår for vår vurdering

Vår anbefaling forutsetter at du gjennomfører prosjektet i tråd med:

- opplysningene gitt i meldeskjemaet
- krav til informert samtykke
- at du ikke innhenter sensitive opplysninger
- veiledning i dette brevet
- Høgskolen i Sørøst-Norge sine retningslinjer for datasikkerhet

Veiledning

Krav til informert samtykke

Utvalget skal få skriftlig og/eller muntlig informasjon om prosjektet og samtykke til deltakelse.
Informasjon må minst omfatte:

- at Høgskolen i Sørøst-Norge er behandlingsansvarlig institusjon for prosjektet
- daglig ansvarlig (eventuelt student og veileders) sine kontaktopplysninger

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

NSD – Norsk senter for forskningsdata AS Harald Hårfagres gate 29 Tel: +47-55 58 21 17 nsd@nsd.no Org.nr. 985 321 884
NSD – Norwegian Centre for Research Data NO-5007 Bergen, NORWAY Faks: +47-55 58 96 50 www.nsd.no

- prosjektets formål og hva opplysningene skal brukes til
- hvilke opplysninger som skal innhentes og hvordan opplysningene innhentes
- når prosjektet skal avsluttes og når personopplysningene skal anonymiseres/slettes

På nettsidene våre finner du mer informasjon og en veiledende mal for informasjonsskriv.

Forskningsetiske retningslinjer
Sett deg inn i forskningsetiske retningslinjer.

Meld fra hvis du gjør vesentlige endringer i prosjektet
Dersom prosjektet endrer seg, kan det være nødvendig å sende inn endringsmelding. På våre nettsider finner du svar på hvilke endringer du må melde, samt endringsskjema.

Opplysninger om prosjektet blir lagt ut på våre nettsider og i Meldingsarkivet
Vi har lagt ut opplysninger om prosjektet på nettsidene våre. Alle våre institusjoner har også tilgang til egne prosjekter i Meldingsarkivet.

Vi tar kontakt om status for behandling av personopplysninger ved prosjektslutt
Ved prosjektslutt 01.01.2019 vil vi ta kontakt for å avklare status for behandlingen av personopplysninger.

Gjelder dette ditt prosjekt?

Dersom du skal bruke databehandler
Dersom du skal bruke databehandler (ekstern transkriberingsassistent/spørreskjemaleverandør) må du inngå en databehandleravtale med vedkommende. For råd om hva databehandleravtalen bør inneholde, se Datatilsynets veileder.

Hvis utvalget har taushetsplikt
Vi minner om at noen grupper (f.eks. opplærings- og helsepersonell/forvaltningsansatte) har taushetsplikt. De kan derfor ikke gi deg identifiserende opplysninger om andre, med mindre de får samtykke fra den det gjelder.

Dersom du forsker på egen arbeidsplass
Vi minner om at når du forsker på egen arbeidsplass må du være bevisst din dobbeltrolle som både forsker og ansatt. Ved rekruttering er det spesielt viktig at forespørsel rettes på en slik måte at frivilligheten ved deltakelse ivaretas.

Se våre nettsider eller ta kontakt med oss dersom du har spørsmål. Vi ønsker lykke til med prosjektet!

Vennlig hilsen

Marianne Høgetveit Myhren

Belinda Gloppen Helle

Kontaktperson: Belinda Gloppen Helle tlf: 55 58 28 74 / belinda.helle@nsd.no

Annex 4: Interview guide (in Norwegian)

1. Fortell om din rolle i kommunen.
   -ansvarsområder/oppgaver
   -antall ansatte og hvilke roller de har

2. Hvordan er AGS rollen organisert?
   -posisjon i organisasjonen, lokalisasjon, teambasert/alene, hvem henviser, arbeidstid

3. Hvilke oppgaver har AGS i din virksomhet?
   -ansvarsområder/avgjørelser som tas, arbeidsoppgaver, pasientgruppe, fordeling av tidsbruk, egen dokumentasjon?

4. Fortell om implementeringen av AGS og hvilke erfaringer du har gjort underveis.
   -hva kjente du til av AGS rollen fra før?
   -hvilke hindringer (fra leger/ledelse/økonomisk/lovmessig), støtte?
   -hvordan ble evt. hindringer møtt?

5. Hvilken innvirkning har du erfart at AGS har hatt på helsetjenesten i din virksomhet?
   -muligheter og begrensninger
   -fordeler/ulemper, styrke/svakheter
   -er det ført statistikk?

6. Hvordan er dine forventninger til ansettelse av AGS blitt møtt?

7. Hvilke utviklingsmuligheter ser du for AGS i din virksomhet?
   -føler du at AGS rollen blir benyttet fullt ut?
   -hva skal til for å utnytte potensialet som AGS rollen har slik du ser det?
   -er det noen savnede oppgaver?

8. Hvilke anbefalinger vil du gi til andre kommuner som vurderer implementering av AGS?