

Interprofessional Education on Complex Patients in Nursing Homes: A Focus Group Study

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Abstract

Background

An ageing population leads up to increasing multi-morbidity and polypharmacy. This demands a comprehensive and interprofessional approach in meeting patients' complex needs. This study

describe graduate students' experiences of working in interprofessional teams with complex patients' care needs in nursing homes.

Method

Students from advanced geriatric nursing, clinical nutrition, dentistry, medicine and pharmacy at the University of K in Norway were joined to groups to examine and develop a care plan for a nursing home patient during a course. Focus groups were used, where 21 graduate students participated in four groups. Data were collected during spring 2018 and were inductively analysed according to a thematic analysis method (Systematic Text Condensation) and discussed using four previously proposed types of coordination practices.

Results

Three themes were identified: 1) Complex patients as learning opportunities-an eye-opener for future interprofessional collaboration 2) A cobweb of relations, and 3) Structural facilitators for new collective knowledge. Graduate university students experienced IPE on complex patients in nursing homes as a comprehensive learning arena.

Conclusions

Interprofessional education in nursing homes disclose challenges and possibilities to develop the health care service for elderly patients with complex care needs. It is important to experience complex situations during professional education, even if frustrating, when students have the possibility to discuss difficulties with each other and the faculty. Educators can arrange their IPE activity to foster more collaborative practices and potentially increase learning outcomes.

Background

Multi-morbidity will increase correspondingly to population ageing, and there will be a growing demand for a comprehensive approach in meeting complex patients' needs (1–4). Interprofessional education (IPE) is one way to realize the requirement of future health care professionals managing complex patients in multiprofessional teams. However, the teaching is still mainly silo orientated (5). Therefore the clear desire for increased interprofessional cooperation among health care professionals from policymakers, teachers, researchers and students (6–7), should be better reflected both in practice and in the educational curricula (8).

To prepare for an increasingly more complex health care sector, several IPE programs have, nevertheless, been implemented within and across universities worldwide (6). The evidence of IPE refers to strong educational outcomes such as change in attitudes, skills and knowledge favouring patients' clinical outcomes (9–10). IPE can strengthen students' own professional role identity, as well as increase the understanding for other health care professionals' work (9). Also, patient-related outcomes can be improved by interprofessional collaboration, e.g. achievement of targeted blood pressure, fewer clinical errors and shorter hospital stays (11).

Studies focusing on interprofessional teams including students from other than the medical and nursing professions are sparse (11–12). Overall, few studies have applied qualitative or theoretical approaches in addressing effects of interprofessional learning or students' experiences of interprofessional collaboration (IPC) and IPE (11–14). Especially, there is limited knowledge about multiprofessional students' experiences from IPE in nursing homes for elderly complex patients (14–18). There are indications that nursing homes can create a good learning platform for students to understand all aspects of a patient's health, and especially of those with complex care needs (16, 18). To increase the knowledge about IPE in nursing homes, this study aimed to describe graduate students' experiences of working in interprofessional teams with complex patients' care needs in nursing homes.

Methods And Material

Method

A focus group study was applied (19–20), to explore not only what participants think of the experience, but also how and why they hold different opinions or attitudes (20–22). The consolidated criteria for reporting qualitative research (COREQ) were used when writing this paper (23).

Setting

Since 2016, the University of K (Norway), has included students in a course which is a collaboration between four faculties and the Nursing Home Agency in K Municipality. It aims at giving students from different health professions the opportunity to learn together in clinical practice. The course includes students in advanced geriatric nursing, clinical nutrition, dentistry, medicine, pharmacy and psychology. The main learning outcomes are (1) to gain knowledge about other health care professionals' focus and approach when examining a complex patient in a nursing home; (2) to perform an interprofessional assessment of a patient; (3) to reflect on the value of interprofessional collaboration in the health care sector (see Box 1).

Approximate placement of Box 1.

Data Collection Instrument

A semi-structured interview guide with open-ended questions was developed; compromising of topics based on the study aim and previous informal project evaluations. The topic guide was concerned with

four main questions (see Box 2). In addition, probing questions were used. The guide was discussed for relevance by members of the multiprofessional research team, consisting of members from advanced geriatric nursing (RH), medicine (EOR, BK) and pharmacy (KS, LM). The guide and the moderation was debriefed after the first focus groups. No major changes were made.

Approximate placement of Box 2.

Sample strategy

All 21 students participating in the course during spring 2018 were invited to participate in the study by e-mail and informed orally at an information meeting before they entered the nursing home practice. The students were from advanced geriatric nursing, clinical nutrition, dentistry, medicine, and pharmacy, all in their final years of their master programs. Psychology students did not participate in spring 2018.

Data Collection

Four focus group (group size 4–7) sessions took place at the three different nursing homes, after the students' final presentation of their clinical findings. The focus group interviews were based on the five established IP-student teams, except at one nursing home where two teams were interviewed together. All 21 students participated in the study: six students from medicine, six from odontology, five from pharmacy, two from advanced geriatric nursing, and two from clinical nutrition. Sixteen were females and five were males. Median age was 25 years (range 22–42 years). The interviews lasted for approximately one hour each. An open discussion environment was strived for through warming up questions. KS moderated two focus groups and assisted in one; BK moderated one and participated as assistant in two. In addition, RH moderated one group where LM acted as assistant moderator. All group interviews were audio-taped and transcribed verbatim by KS and BK. Participating students received a cinema ticket of 250 NOK and a light meal during the focus groups.

Data Analysis

An inductive thematic data analysis based on Systematic Text Condensation was carried out (20, 24). Notes from students' patient case presentations complemented the data analysis. KS, BK, RH, LM and EOR, participated in the initial analysis where preliminary themes were identified. The analysis began with a process of familiarization with the transcripts. All researchers individually read through the whole data material. In a consensus meeting, three preliminary themes were identified (relations, organization and learning outcomes) for further analysis. The five researchers thereafter sorted the transcript from one focus group according to these preliminary themes. In a second consensus meeting, the initial sorting was discussed and some clarifications were made. Thereafter, KS further organized the material into main themes and sub-themes with descriptions which was then discussed by all the team core members. Relevant quotes were extracted from the data, to illustrate the final themes.

Ethics

All methods were carried out in accordance with relevant guidelines and regulations. The study was approved by the Norwegian Centre for Research Data (Privacy Ombudsman) (reference number: 59948) (25). Acting as acting as a national privacy ombudsman responsible for approving all research projects processing personal data in Norway, and providing data protection services for many Norwegian research organisations. The respondents gave their written informed consent, and participation was voluntary. Further, the students were informed that they could withdraw at any time without any consequences on their academic grades. The focus groups interviews were undertaken by researchers not involved in the formative evaluation of the students. All data information such as focus groups' recordings, and informed consents were stored separately and encrypted in two locked cabinets during the transcription phase and thereafter deleted.

Results

Three main themes were identified: 1) Complex patients as learning opportunities-an eye-opener for future IPC 2) A cobweb of relations, and 3) Structural facilitators for new collective knowledge.

Complex patients as learning opportunities- an eye-opener for future IPC

Patients with complex health issues in nursing homes seemed to create a specific learning opportunity for current and future interprofessional collaborations and how students experienced the learning activity. The students expressed that nursing homes were well suited for an interprofessional training, because most of the patients have permanent stays and have complex needs. However, some students felt that the situation was unrealistic, as interprofessional collaboration does not have that standard in nursing homes in Norway. Therefore, they partly questioned the learning experience. Still, all students appreciated the value of interprofessional collaboration on complex patients and wanted more of it. For most students, the interprofessional situation was described as new; regarding both collaboration and the ambiguous approach to solve patients' complex health needs together. The students reflected about how the interprofessional student team could help with the patients' complex health needs. A few students mentioned that they felt a new kind of security with regard to the patient's health, as they took decisions as a group with various professional backgrounds. Some students nevertheless mentioned and experienced a tension when prioritizing between different suggestions for a patient's complex health care needs. In a way, they described they perceived such prioritizing both as a challenge, but also referred to this as an incentive for learning as it broadened their perspectives on a health care problem.

A few students declared that they are used to be assigned a specific patient problem and have to outline a plan for treatment and care. In this course, the student teams encountered patients with no "predefined problems" to take care of, which was described as something new and challenging for them. The students agreed on describing patient problems that they were unable to find a solution for as "psychiatric problem", and not to perform further investigation. All groups experienced patients with varying degrees of psychological problems. Therefore, the students reflected about the difficulties to

meet, confront and find solutions to such problems. They also expressed that they really missed a psychology student on their team.

Group B

Student 13: Deviant behaviour in nursing homes is not an unusual phenomenon. You must be able to understand what's going on.

Student 16: [...] We talked about the patient with the other group, and then someone suggested that it might be psychiatry. And then it stopped...

Student 13: I mean like “where do one start”?

Student 16: You don't have anything to come up with. What could you do about it?

The students explained the learning that took place by observing others examine patients and how they asked questions, and subsequently through their common discussions about the patient case. One student expressed being surprised by how much important information other professionals could gain in a very short amount of time. Another student described his/her experience of how dependent they were on each other to solve complex health care problems. The students stated that their personal experience of interprofessional collaboration was a strong factor for lowering the threshold to contact and actively use each other as resources in future work. The students also mentioned how they had explored their professional selves. This was said to strengthened their own learning. They expressed that they learnt to trust their own knowledge, skills and abilities as representatives for their respective professions and that they through this experienced professional development.

Group C

Student 8: You get a wider perspective when you see the others do their examinations and evaluations. You kind of get the whole picture.

Student 6: I also start to think about other things. For instance, if you see that a patient is on certain medications, you think “what did the doctor think? Why is the patient on these medications?”. But now I understand that it's not so easy to deprescribe certain medications. The patient is not always willing to do so. You don't think about that when you work separately. You think you know best, most of the time. But now we don't, so it was fine to have that experience as well.

A cobweb of relations

Our analysis uncovered that students who participate in IPE on complex patients encounter multiple relations that they need to manage. The students described their relations with the patients, and they respected the individual and said they tried to place the patient in the centre of the team. The students described an approach to the patients with non-invasive examinations and by offering breaks. And they stopped when the patient was tired. Many students reflected in the focus groups about how they as a

group influenced the patient encounter in a slightly different way compared to the uniprofessional approach; an even more imbalanced power situation could arise as the students outnumbered the patient. Some thought this could hamper patients' willingness to share their problems, beyond the fact that the examination took longer time and could make the patient tired. Nevertheless, a couple of students stated that the patients appeared to have enjoyed the experiences, felt safe and shared their problems willingly. Several students stressed that it was important and a strong motivating factor that the project was relevant for the patient and not just for the students' learning. They further stressed the significance of communicating their conclusions to the patient and to the staff at the nursing home. Before meeting the other group members, several students expressed a feeling of nervousness and insecurity about their knowledge, role and abilities in the meeting with other professions. The informal information meeting was recognized as positive, and functioned as a "relational ice-breaker" for most students.

Group D

Student 18: I thought it was nice to be prepared for a situation like this, because you are supposed to speak up. I must say that I felt a bit nervous, but it might be because I don't have so much clinical experience yet. It was very nice, though! We met a nice group. I felt like I could say what came to mind, without being afraid that what I said wouldn't be "academic enough". I dreaded to take a measurement "here" in front of the medical student because I couldn't say the right anatomic names [...].

Some students described the importance of individual qualities to form successful student teams, such as openness to others' ideas in a non-judgmental way, and a willingness to listen and be interested in the other team members' views. Having a common reference, such as medication for the dentist, doctor and the pharmacists, appeared to be a useful starting point for the relationship, easing the understanding of others. The students said the awareness of expectations on each other contributed in building these new relations. None of the students mentioned a need for training in interprofessional collaboration in advance of the course even when asked directly during the focus groups.

The students pointed out the importance of building a good relation to the nursing home's staff members (doctors, nurses and nurse assistants) for the students' possibilities to improve patient outcomes. They emphasized and appreciated the knowledge shared by the permanent staff, thus helping them to gain a better understanding of the patient's history and daily situation. To ensure that their work was transferred back to the care of the patient, they saw the need for staff to be present in the patient case presentations, as well as in the initial patient information-gathering phase.

Some students described forming and utilizing relations with the educators to secure and support them in their new role in the interprofessional team. For example, the educators helped in confirming their findings and in discussing the type of content and level of details of the examinations. The students also mentioned the safe learning environments during the patient case presentations was a positive learning

experience, such as the educators being interested in what they had found out about the patient, rather than examining the students.

Structural facilitators for new collective knowledge

The participants pointed out that the organization and collaboration in the student teams played an essential role in utilizing the additional learning effects of the interprofessional student team on complex patients. Both the students' own organization of their teamwork, and how they experienced the administration behind, and available time for IPE were described as central in creating a well-functioning IPE activity.

Even if the structure for facilitating for interprofessional approaches and understanding was thought to be in place (from the perspective of the educators), our findings shows variation in how the students cooperated. Some described how they had cooperated a lot and discussed the patient together and pointed out this as very valuable for their learning experience, on the other hand some students said that they had not discussed their clinical findings with the other group members at all. In addition, there were groups who presented a mix of these endpoints. In the focus groups discussions students with less close collaboration had not finalized their patient care plan together; instead, they said that they had worked by themselves individually to solve the problems most relevant for their profession e.g. the dentist had solely focused on dental health. In one group where there were two team members from the same professions, the students said they had teamed up with their profession, without engaging in the new interprofessional team. The variation in the groups' collaboration are illustrated in these quotations:

Group A

Student 5: Well, we medical students went together (before meeting the patient), and also the pharmacy student, and looked at it alone. The odontology students looked at what they planned to ask about. We grouped [uniprofessional] in a way. That's almost what you must do. To know what to ask for from your own field of expertise.

Student 4: And then we worked by ourselves to look through the information we got from the anamnesis. That has been separate, and we have not coordinated any information. So, the report meeting was actually the first time we got to listen to findings and solutions from each other.

Student 5: It would have taken a long time to arrange a meeting for all of us[...].

Group B

Student 13: It is a huge advantage when we sit in the same room. When you spontaneously get a thought, you can bounce your idea off each other and ask the one that probably knows the most. You can't do that reading documents or when you are at home and work with the document [this group worked together on a document online], where you just put in your own notes. It is useful to be in the same place.

Student 17: You get to “challenge your view”, both because it broadens, but also because you get another point of view.

The students discussed the availability of accessible patient information prior to the patient assessment and examination. On one hand, more substantial information could rationalize their examinations. On the other hand, some students expressed that too much information may limit their interprofessional learning in gathering important data.

Group C

Student 10: We didn't get the whole picture. And I wasn't sure of how much of the picture we were supposed to get. Was it the intention that we should not be prejudiced? Or were we supposed to do the examination so thoroughly that we also understood how it has been the past weeks or months?

Student 12: And we figured out that not necessarily everything the patient said was correct. I think it was good to know what had been done in advance, so we could prioritize which examinations we should do with the time restrictions.

Time was an issue for the students both in relation to students' professional maturity, i.e. when in the curricula the interprofessional workplace training should be scheduled, and in relation to the time needed to fulfil the training. As an example, the students discussed what could be sufficient time between meeting the patient and the patient presentations, when in their time curricula such training was suitable, how long time they needed for examining the patient and building relations with the patient, time for a team to get enough access to the patient and for processing the findings and search for additional information. Afterwards one group reflected upon the possibility that using each other more in the patient interview could have been timesaving. The students wanted a more condensed training adjusted to their individual time schedules.

Discussion

This study aimed at increasing the knowledge about students' experiences with IPE in a setting including patients with complex care needs in nursing homes. The major finding is that students are challenged on many levels when collaborating together on complex patients. For example patients with no predefined problems force the students to look at the patients from many professional angles, they experienced that they have to build relations with several participants in the learning activity to solve the patients care needs. From the discussions the students seemed to develop patient relations both as a team, and as individuals, that depended on previous team members' actions. The various ways of collaborating as teams challenged their normal way of working as individual professionals.

This makes in line with other studies (16, 18) nursing home is an appropriate arena for an IPE activity because it provide the possibilities for students' to experience complex patients' situations during their education. Even if it was challenging and sometimes frustrating, their possibility to discuss difficulties with each other and the faculty enhanced their scope of the patients need and the advantages of

collaboration. We argue that IPE in nursing homes facilitated the students' scope from having a fragmented approach of the patients towards a relational and collaborative practice that improve patient care. Two recurring findings in previous studies are that IPE can strengthen students' own professional role identity, as well as increase the understanding for other health care professionals' work (9). Our study confirms these findings also in a nursing home setting, and by conceptualizing these categories as window and mirror learning, our study adds conceptually to the literature. Window and mirror learning are concepts found in the pedagogical literature (26–28) and are well suited to use in the context of IPE to understand *how* students obtain these learning outcomes in nursing homes. This learning experience could be described in terms of windows opening for new perspectives and first-hand understandings about, the other students, medicines, diseases and the patients. On one hand, the students can learn by watching other students; in this case they “open a window” for new perspectives and other ways of solving a task. On the other hand, students can learn by being challenged and confronted by the other students. They “watch themselves in the mirror” when the other students question what they do (26). Here the complex patients appear to have created a great forum for this.

IPE in nursing homes appears to create a safe forum for students to step out of their uniprofessional approach to other more collaborative practices. However, our findings suggest that how students structure their collaboration in the teams is important for their total learning experience on complex patients. For expanding current understanding of IPE in the complex health care system, we apply four types of coordination practices in our discussion (29). During a collaborative process, Vik identified four types of coordination practices that may occur (29). Even if these coordination practices are revealed from a specific context, the concept has generic features that make it useful to understand broader perspectives, as for example reach full potential of IPE in nursing homes.

We uncovered groups with a focus on establishing physical meetings throughout the whole process and having discussions for knowledge sharing. They expressed that they had achieved a different collective knowledge experience, i.e. a deeper understanding of the patient and each other, compared to than groups that did not meet more often than scheduled. Some groups appeared to have been engage more in *relational collaboration* practice (29). Such practice is characterized by closeness in the practice, and high level of interlocking of the various professions' different understanding. This is achieved through many and various physical meetings and negotiations between the actors. This leads to a common understanding and recognition of each other's contributions in the task solving process (29).

On the other hand, some of the teams had instead not engaged fully in the interprofessional collaboration. They presented uniprofessional suggestions for the complex patients' health problems without building on their potential strengths as an interprofessional group. Such a practice is more influenced by an *operational closed collaboration*. For example in our course the students had the opportunity to meet each other, but not all utilized these opportunities. As a result, in such teams the actors never reach a common understanding about the task and each other, even though there are various physical meeting points, which was apparent in our results (29). Our findings, therefore indicate the importance of the physical and social organization of the teams for achieving maximum learning

outcomes, and potentially also improving clinical outcomes for the patients. Therefore to achieve a successful *relational collaborative* IPE practice, pre-training in teamwork might be needed, i.e. beforehand introducing theoretical knowledge about other team members and inform students about how to create successfully interprofessional teams and how physical but also online software can create such platforms. Also, improvements of several administrative factors need to be considered in ensuring a *relational collaborative* practice experience (13, 29–30). In our study this is exemplified by the students wish for an effective patient meeting in terms of time efficiency, the need for including only one participant per profession in the group, and a better aligned time schedule. For example, Hean et al. argue that social aspects of learning, here relationship building between participants, distinguish interprofessional learning from uniprofessional learning (13). Social aspects of learning by the conflicts or negotiations between the students' different competences, roles and understanding will then help to create a mutual knowledge (or mutual understanding of each other's competences) that should form a good starting point for further interaction such as by *relational collaborative* practices and/or a *coordinated delegation* practices which is understood as physical distance, but still an mutual acceptance of the professions' different understanding. The integration could be done by e.g well-functioning Information and Communications Technology (ICT) systems (9, 13, 29).

The students expressed that the health care sector today is not characterized as interprofessional and is inclined towards distance and differentiation ie. *fragmented delegation* meaning that collaboration was characterized by distance and differentiation (29). When starting their professional lives, students who have experienced a practice of *relational collaboration* during their education might lower their threshold to confer with other professionals. By knowing each other's limitations and strengths, physical distance will not be equivalent to a uniprofessional approach, and a *coordinated delegation* might be expedient (29).

Methodological Discussion

One limitation might be that two moderators were involved, as two focus group took place simultaneously at one nursing home. Immediately after the first two focus group, a de-briefing session was held with the moderators and co-moderators, discussing the interview-guide. Rather than being a limitation, we experienced that the use of two moderator teams actually enriched the interviews. A strength with this study is the interprofessional research team working together, which gives a wider perspective on the analysis and interpretation of the empirical data collected.

RH and LM, who conducted one of the focus group interviews, had previously been involved in the course as educators, but they did not have a major role at the time of the data collection. KS and BK had no previous connection to the project and were enrolled to be an independent part of the data collection and analysis team. By using the already established student teams, we might have missed out negative experiences from the teamwork. On the other hand, the students seemed to be confident to express challenges regarding IPE.

Conclusions

Our study shows that graduate university students experience IPE on complex patients in nursing homes as a comprehensive learning arena. It is important to experience complex situations during professional education, even if frustrating, when students have the possibility to discuss difficulties with each other and the faculty. Educators can arrange their IPE activity to foster more collaborative practices and potentially increase learning outcomes. Interprofessional education in nursing homes disclose challenges and possibilities to develop the health care service for elderly patients with complex care needs.

List Of Abbreviations

COREQ, consolidated criteria for reporting qualitative research; IPC, Interprofessional collaboration; IPE, Interprofessional education WHO, World Health Organization

Declarations

Ethics approval and consent to participate

All methods were carried out in accordance with relevant guidelines and regulations. The study was approved by the Norwegian Centre for Research Data (privacy ombudsman) (reference number: 59948) (25). Acting as acting as a national privacy ombudsman responsible for approving all research projects processing personal data in Norway, and providing data protection services for many Norwegian research organisations. According to Norwegian law we have no obligation to seek approval for this study at the Regional Committees for Medical and Health Research Ethics (31). However, ethical considerations were undertaken (32): the respondents gave their written informed consent, and participation was voluntary.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

R is employed by Norlandia Care. Norlandia Care is delivering care in nursing homes, for the Nursing Home Agency in K Municipality, where the course partly was performed. The authors alone are responsible for the content and writing of this article.

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Authors' contributions

KS: Conceptualization, **Data curation**, Formal analysis, Investigation, **Methodology**, Project administration, **Supervision**, **Visualization**, Writing - original draft. **BK:** Conceptualization, **Data curation**, Formal analysis, **Investigation**, **Methodology**, Visualization, Writing - original draft. **RH:** Conceptualization, Formal analysis, **Investigation**, Methodology, Writing - review & editing. **LM:** Conceptualization, **Data curation**, Formal analysis, Investigation, **Methodology**, **Resources**, Writing - review & editing. **HW:** Conceptualization, **Resources**, **Writing – review & editing**. **LHH:** Conceptualization, **Resources**, **Writing – review & editing**. **RA:** Conceptualization, **Resources**, **Writing – review & editing**. **TW:** Conceptualization, **Resources**, **Writing – review & editing**. **HS:** Conceptualization, **Resources**, **Writing – review & editing**. **NS:** Conceptualization, **Resources**, **Writing – review & editing**. **EOR:** Conceptualization, **Data curation**, Formal analysis, **Methodology**, **Project administration**, **Resources**, **Supervision**, Writing - review & editing.

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