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"A GREAT STRESS AMONG STUDENTS" - MENTAL HEALTH NURSES' VIEWS OF MEDICATION EDUCATION: A QUALITATIVE DESCRIPTIVE STUDY

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Keywords
Clinical Competence; Medication Management; Medication Errors; Nursing; Pharmacology; Students

ABSTRACT

Background

Registered mental health nurses report dissatisfaction with the level of medication knowledge demonstrated by undergraduate nurses. However, little is known about which particular areas staff nurses are concerned about, and how they feel education can be enhanced in both academic and clinical settings.

Objective

To investigate the views of staff nurses on the delivery of medication education to undergraduate mental health nurses.

Design

A qualitative descriptive design was adopted.

Methods

Two focus groups were held with registered nurses in two acute mental health facilities. Data were analysed using qualitative content analysis.

Results

The first theme reports on the difficulties staff nurses observed with both undergraduate and newly qualified nurses around medication. It was noted that these individuals had difficulties interpreting medication charts/Kardexes, and were unable to provide medication-related education to service users. The second theme reports on strategies to enhance medication education, as recommended by participants. It was suggested that more practical education should be delivered in academic settings, with a focus on simulation and presentations from clinical staff. In the clinical settings, it was suggested that preceptors should provide education at less busy times on the ward.

Conclusions

This study gives insight into areas in which education needs to be strengthened, in order to improve the medication knowledge of undergraduate and newly qualified nurses. Further research is needed to develop evidence-based strategies to enhance this education.

1. INTRODUCTION

The practice of medication administration is a particularly important and high-risk nursing activity, one that is fundamental to everyday nursing care (White et al., 2018), with 40% of the nurse's working day dedicated to this task (Armitage and Knapman, 2003). In the area of mental health, medication is considered to be a central component of interventions offered to service users (White et al., 2018). For nurses to practice safe and effective medication management, they must have the requisite knowledge of pharmacology and the ability to reconcile this knowledge with changing service user contexts, practices, and levels of complexity (Manias and Bullock, 2002). It is crucial that such knowledge is provided to nursing students throughout their education, guiding them from theory to practice, supporting them to acquire the necessary knowledge and understanding (Benner et al., 2010). The onus is on clinical preceptors to provide education in the clinical learning environment and to facilitate student learning (Williams 2018); however, there is little evidence available in relation to preceptors' experiences around educating student nurses about medication, and their views around the medication-related content provided to nursing students.

2. BACKGROUND

The novice-to-expert development model places experiential learning as essential in nursing, emphasising its centrality to the acquisition of knowledge, experience and skills (Benner et al., 2010). Nursing students need to firstly acquire knowledge of medication and administration skills, secondly, retain this learning, and, finally, translate this knowledge and skill into practice (Chuang and Tsao, 2013). This process is achieved through a combination of theoretical knowledge acquisition and real-world learning, with education provided in both academic and clinical settings (Coyne et al., 2013). Within the academic environment, students are taught medication administration during lectures on nursing, pathophysiology and pharmacology (Chuang and Tsao, 2013; Coyne et al., 2013). It is essential that they know the pharmacological actions/mechanisms of medications they administer, as well as the principles governing safe preparation and administration (Simonsen et al., 2014). It is vital that nursing education guides the student through the constituent steps of

competency, and ensures adequate preparedness for medication management for their roles as staff nurses (Mettiäinen et al., 2014).

In order for the student to progress their knowledge of medication administration, the knowledge acquired in the academic environment needs to be built upon in the clinical setting. In these settings, student nurses begin to participate in medication administration under the supervision of a registered nurse, who takes on the role of 'preceptor'. Preceptors have a responsibility to educate, supervise, and assess students in learning medication administration. While preceptors ultimately retain accountability for the administration of medication, student nurses are afforded supervised opportunities to practice their medication knowledge and skills, and to apply this to real clinical cases (NMBI, 2007). Despite the education opportunities provided in both academic and practice settings, it has been noted that the level of pharmacological competence demonstrated by undergraduate nursing students is often viewed as inadequate (Mettiäinen et al 2014). How students are prepared at undergraduate level relates directly to the area of preparedness for practice, and it has been highlighted that the transition period between undergraduate nursing and post-registration practice is a time associated with significant learning challenges. In this sense, issues around medication competence is not limited to student nurses: registered nurses also report that recent graduates have less than optimal levels of pharmacology knowledge (Manias and Bullock, 2002).

Considering that medication knowledge/competence among nurses has been linked to medication errors and patient safety (Simonson et al., 2014), the issues around gaps in medication knowledge need to be addressed. It is important to understand how formal nursing education and preparation can be enhanced, so as to optimise transitions experienced by students, and to minimise associated theory-practice gaps (Hatlevik, 2012). In particular, more education on medication management is needed for recently qualified nurses and nursing students (Chuang and Tsao, 2013). There has been research on the perspectives on nurses and newly qualified nurses on medication knowledge and education; however, nurses' views on the medication education amongst nursing students is limited. This is important, as nurses are often the ones tasked with facilitating students to begin medication administration in practice. Furthermore, while there have been questions raised about the way in which medication education is delivered to students (Simonsen et al., 2014), the perspectives of experienced registered nurses have not been taken into account.

3. PURPOSE

The aim of this research was to gain an understanding of the views of registered nursing staff on the delivery of medication education to undergraduate mental health nurses.

4. METHODS

4.1. Design

A qualitative descriptive design was adopted, which is useful when little is known about a topic and allows the researcher to stay close to the data without viewing it through a predetermined philosophical lens (Sandelowski, 2000).

4.2. Data Collection

Purposeful sampling was used. Staff were in two mental health inpatient units in the South of Ireland were informed via poster and email. Two focus groups were undertaken with qualified mental health nurses in the acute units, one of whom took field notes. The interviews were guided by a piloted semi-structured interview schedule, and facilitated by two experienced researchers. The focus groups were audio recorded and transcribed verbatim. The first focus group consisted of 6 participants (*n*=3 male, *n*=3 female), two of whom were staff nurses and three were nurse managers. The second focus group consisted of 5 participants (*n*=5 female), three of whom were staff nurses and two nurse managers. Both focus groups were of one-hour's duration.

4.3. Data Analysis

Qualitative content analysis was used to analyse data. Data within the transcripts were coded, which involved condensing the text while retaining its core meaning. Categories were developed from the codes, which represent the manifest (descriptive, surface level) content. The latent content, which is more concerned with the underlying meaning, deconstructs the manifest content in the form of themes. Throughout this process, various levels of abstraction and interpretation occurred (Graneheim et al., 2017).

4.4. Rigour

Rigour was established using the criteria defined by Lincoln and Guba (1985). Credibility can be enhanced by recruiting participants who are familiar with the topic under investigation (Matchim and Kongsuwan, 2015); all participants had experiences educating students about medication. To ensure transferability, rich, in-depth description is provided. Dependability was achieved by having two interviewers facilitate each focus group, and by describing each step of the process in depth. Confirmability was established by having the analysis being undertaken independently by two researchers (JG; MH), where a consistent working and re-working of the categories and themes was undertaken. A third researcher (AH) reviewed the findings for meaning and relevancy.

4.5. Ethics

Ethical approval was gained through the University Social Research Ethics Committee (Log 2017 – 117). Participants were provided with information sheets and consent forms; the objectives of the study were also explained verbally, prior to consent being given. Interview transcripts were coded to protect the anonymity of participants.

5. RESULTS

5.1. Theme 1. "They don't know how it's used, when they can use it": Difficulties Associated with Medication Education

5.1.1. Observed Gaps in Knowledge

It was noted that students demonstrate an inability to distinguish between different medications. Of particular concern was the fact that there are students in their final year of study, close to qualifying as staff nurses, who are unable to identify one medication group from another, which was regarded as very basic knowledge.

> *Okay, this person is 2-3 months away from being qualified and he or she doesn't know the difference between a benzo and a tranquiliser (Focus Group 1; Participant 3 [1.3])*

Such gaps in knowledge had the potential to become an issue for people post-qualification, and into their careers as staff nurses: participants reported that newly

qualified staff are often not aware of the wider issues associated with medication, such as side effects , or how to interpret medication Kardexes (charts).

> *Well, that's one thing that has come up: that people might be looking for an inhaler, and they mightn't know to, maybe, look in the section to see what the route of administration is, that they mightn't be familiar with the Kardex at all as a concept (1.5)*
>
> *people maybe wouldn't be confident in, let's say, knowing the side effects of certain medications (2.4)*

Preceptorship was reported to have a significant effect on students' medication competence. Owing to staff shortages, it was not always possible for a student to remain with the same preceptor throughout the course of a clinical placement. In such instances, it was noted that preceptors may feel pressured into signing students off on a competency (such as medication management), despite not being confident that the student was actually competent in this area.

> *I suppose that's how people could slip through cracks then, you know. Signing off things: you had to sign off this person but you only had them for a week (2.2)*

5.1.2. Poor Knowledge of Medication Impacts Service User Care

Owing to a lack of relevant knowledge, it was noted that student nurses (and qualified staff nurses) do not have the confidence to question prescriptions, or to appropriately challenge medical decisions. This results in the forming of a hierarchy, with doctors being seen as having specialised knowledge, and so placing them in a position of power. In this sense, nurses can sometimes be at a disadvantage in comparison to under members of the care team, and their autonomy as practitioners is compromised. It was suggested that enhancing knowledge around medication would give nurses the confidence to participate more actively in team decision making, thus improving service delivery.

> *It's like you're penalising the students for doctors prescribing. It's the doctors that prescribe medication, like, it's like, "that's a hierarchy system still, and we must do as the doctors prescribe" (1.1)*
>
> *It would actually improve service delivery 'cause you'd have a better understanding coming out and you'd be quicker to grasp and quicker to challenge (1.4)*

It was noted that newly qualified staff will frequently encounter medications that they were not taught about as students; this indicates that current education does not cover a comprehensive range of the medications used in practice. The associated lack of familiarity may lead to confusion and an increased risk of making medication errors.

I made an error when I was newly qualified because I hadn't ever seen a clozapine titration before (1.5)

5.2. Theme 2. "It's linking that theoretical side to that practical side": Improving Medication Education

5.2.1. Academic Strategies

It was noted that there were certain medications frequently prescribed in mental health settings, and it would be crucial that students should have an awareness of these. Rather than attempting to teach students about all medication, a focus on commonly prescribed psychiatric medications was recommended. Some of these were highlighted as being "high-risk", and it was suggested that students should be made aware of this status.

if they had a baseline knowledge in the main ones that would be, you know, your Seroquels, your Clozapines, your… your Chlorpromazine (1.4)

I put Clozaril, I put it into like a category like Insulin or like Warfarin, like really dangerous drugs, really important medication. […] You know, it's just not another tablet (2.4)

As discussed under the first theme, participants had concerns about students' inability to interpret medication Kardexes. It was suggested that an introduction to the Kardex in the academic setting would result in less confusion when having to engage with it in practice. Participants commented that such an approach would reduce the likelihood of making errors related to routes of administration.

I think that a bit of an awareness about the actual medication Kardex, that maybe that they could explore the Kardex in college before they come out on placement and what their roles and responsibilities are with regards to knowing how something is for inhalation, or whether it's to be taken orally or is a topical cream (1.5)

Participants recommended that people responsible for administering medication on a daily basis should teach within the academic setting. Participants reflected on experiences of having had talks from practice nurses during their own education, and stated that this was an invaluable experience for them.

we had a nurse come in from the community and she was a nurse prescriber as well, and it was actually some of the best medication training we had gotten in four years (1.2)

Participants also commented on the benefit of having been exposed to lectures from pharmacists. This allowed staff to develop their understandings around the broader area of medication management, such as medication interactions. However, others expressed that pharmacist input was not relevant to nursing. Instead, it was reported that the information delivered by pharmacists was too technical and difficult to relate to nursing practice.

where you had your man from the pharmacy come in and he explained as to why you can't give medication with certain things, d'you know, and why you need to take them at certain times – […] I thought that was so helpful (2.1)

we got a pharmacist to come in and give us a talk, but again it was very… um… it was very from a pharmacist's point of view. It wasn't pragmatic to nursing (1.1)

It was suggested that having students present on their own experiences with medication would help in developing in-depth knowledge, in addition to disseminating important medication-based information to their peer group. In order to connect theory with practice, participants suggested that students could present a case study from placement to their peers. Because the student would be actively involved in seeking out information, they would become engaged in the medication education process; this approach would help to enhance their learning experiences, and also help them to better retain information.

if they picked a certain client and did a case study on them, but include, like, the medication that client is on and, you know, relate it to that and then present it back to the class (1.2)

by actually doing, you know, presentations, they might retain more (2.1)

A simulated medication round was also suggested as an effective teaching strategy for students, one that would help prepare them for placement. While completing a simulated medication round, it was recommended that the student could also be exposed to the use of the medication Kardex. Prior to the medication round commencing, the instructor would deliberately insert medication errors into the Kardex, requiring the student, not only to administer medication as charted, but to engage with theoretical content covered in class.

> *Let's say, have a mock drug trolley with, let's say, 10-20 tablets or, you know, boxes, let's say, and just talk about […] "This is what the routine is in the morning. This is what a Kardex looks like, this is what the staff nurse will be doing in the morning" (2.4)*
>
> *do maybe a mock, like… mock Kardexes and maybe hide 20 mistakes in the Kardexes, […] bizarre things, like the use of Ibuprofen for agitation and, d'you know, to get them to circle it, just to kinda highlight these kinda things (1.5)*

Participants agreed that there needs to be an assessment process devised to maximise students' retention of information. Rather than a more traditional format of examination (i.e. a written test), participants embraced a more practical approach. This would involve the student standing at a simulated medication trolley, giving an account of particular medications in depth.

> *And being, like, over a drug trolley, standing with a tutor, and the tutor points out, let's say, Venaflaxine, and, "Can you tell me a bit more about that? Why would somebody be on this tablet? What's it for?" A kind of… like, a talking exam, more, I think (2.4)*

5.2.2. Clinical Strategies

Although the importance of observing drug rounds was highlighted, participants commented that there were times when it would be too busy to actively engage with students. Instead of teaching students during such busy periods – such as the morning medication round – it was recommended that preceptors should take advantage of quieter, less demanding times. Furthermore, due to the reduction in the level of ward activity at

these quieter times, there would also be an opportunity to continue with medication education after the medication round had been completed.

> *Like, a quieter drug round, let's say the tea time meds might be the quietest meds. Or even after the drug round, close the door and then staying there for, like, 20 minutes going through the drug trolley (2.4)*

Student nurses engage in competency based assessment on placement, and it was suggested that learning outcomes around medication management should be made more explicit in their documentation. It was reasoned that this approach to education would help to bridge the theory-practice gap, allowing students to see the practical side of the theoretical content covered while in university/college.

> *if you had a list of competencies that somebody has to achieve with regards to Medication Management that had a grounded basis in the learning that they received in college, that'd be a very effective way (1.5)*

The opportunity to have a single page containing a checklist of medication outcomes would mean the preceptor would not have to read through a larger document, and would result in a lighter workload for them. Despite having commented that medication education is both complex and important, such a suggestion indicates that preceptors are not always willing to engage with this process, and view medication education as a "tick box" exercise.

> *So, when the student comes, their preceptor can just flick through their book and say, "Oh she's been exposed" […] like, we are busy, nurses are busy, we don't wanna be traipsing through reading… whatever they're called (2.5)*

5.3.3. Timing of the Delivery of Medication Education

There was disagreement among participants about how early medication education should be delivered. Some participants argued that, by introducing this education in first year, students' confidence and knowledge would be greatly enhanced, and the level of engagement on clinical placement was predicted to improve. Conversely, it was expressed that this period was better served orientating students to basic service user care.

if they have an understanding of what a nurse is doing, they're going to be feeling more included when they're going into placement or the field and not so overwhelmed (2.4)

as a 1st Year student, you're worrying about taking someone to the toilet or showering someone for the first time. You're not gonna be wantin' to know about Lorazepam, realistically (2.2)

However, there was a general consensus among participants that education around medication should be incremental. It was reasoned that, if students are given too much information at one time, they would not be able to recall what they had learned, and such an approach was perceived as being counter-productive.

You know, there's no point in bombarding them with too much because they're not going to retain it (2.5)

6. DISCUSSION

The aim of this study was to investigate issues observed by registered nurses in relation to student nurse medication education, and their suggestions for how education can be enhanced. Participants had concerns about students' lack of knowledge of medication groups, their inability to interpret Kardexes, and uncertainty about side effects; it was noted that such deficits in knowledge could result in medication errors. Lim and Honey (2014; 2017) found that newly qualified nursing staff were poorly informed about medication, with only between 18.2% and 20% always aware of the adverse side effects to observe for with the medication they administered, and only between 12% and 18.2% always aware of the predictable side effects of medication. It has been noted that organisational issues – such as short staffing – often result in medication errors (Cloete et al., 2015). However, the link between dificulties with Kardex interpretation or identification of medication groups has not been investigated.

Participants reported pressure to sign student documentation. While the concept of "failure to fail" is well reported in the literature, the focus tends to be on the burden on preceptors faced with failing students, or the process of providing feedback to weak students (Vinales et al., 2015; Cassidy et al., 2017). Luhanga et al. (2017), however, noted that some preceptors are willing to fail students owing to their lack of knowledge around

medication management. It is possible that weaker students sometimes progress due to preceptors not having time to deliver education owing to busy work environments. Staff nurses are often over-worked and under-resourced in the current health service context (Williams, 2018). One method of supporting both students and preceptors in this regard is the introduction of "protected time", where both parties meet on a regular basis – for a recommended one hour – to identify learning needs (Bennett and McGowan, 2014)

The negative impact on service user care due to a lack of knowledge about medication was also discussed. Studies on provision of education about medication to service users generally focus on adherence, rather than nurses' or student nurses' difficulties associated with provision of education (Ehret and Wangm 2013; El-Mallakh and Findlay, 2015). Studies that have investigated other barriers have found that newly qualified nurses are not always confident in providing such information to service users (Lim and Honey, 2014; 2017). Bowen et al. (2017) found that, despite demonstrating positive attitudes towards their role in service user medication education, nurses do not spend much time delivering this education to students.

Participants suggested a range of ways in medication education could be enhanced. Although it was recommended that practicing nurses should deliver medication content in college, there is no evidence to suggest that these nurses are better positioned than nurses working in academic settings. However, it is crucial that the person delivering education has practical knowledge , and can model safe medication management for students (Krautscheid et al., 2011). Despite peer education being recommended by participants, it should be noted that peer learning is not always positively regarded. For example, previous research has found that students find peer education to be confusing, and request further input from academic staff (Hermann, 2013). However, there is no evidence currently available on peer education around medication.

The use of simulation was also recommended. Simulation is frequently used in nurse education, and is positively evaluated as a method of preparing students for practice (Krautscheid et al., 2011). The use of simulation has been investigated with mental health nursing students; however, the focus of such studies is seldom on medication management (Piette et al., 2015). Where research has been conducted on the use of simulation and medication, this is only one element in a larger studies, such as developing therapeutic relationships or recognising mental health diagnoses (Murray, 2014). A simulation approach

to examinations was also recommended – commonly known as OSCEs (observed structured clinical examinations). OSCEs are positively regarded by students in improving medication knowledge; however, they are also evaluated as being stressful (Selim et al., 2012). As with simulation in general, studies on OSCEs do not always focus specifically on medication, with this aspect of education being assessed along with several other aspects (Krautscheid et al., 2011; Selim et al., 2012). Moreover, there is often an emphasis on using OSCEs to assess medication calculations (Barkhouse-MacKeen and Murphy, 2013; Coyne et al., 2013); there is a need to investigate the use of simulation and OSCE approaches to education in improving other areas relevant to medication management.

Participants recommended making medication management more explicit in the student practice assessment document. This strategy was embraced as it would lighten the work of preceptors, who could see if the student's medication competency had been ticked off by a previous preceptor. Learning about medication is a complex process (Lim and Honey, 2017), and there is caution advised against reducing such education to a "tick-box" exercise (Bailey, 2012; Morris, 2014). While the standardised clinical assessment document introduced in Ireland in 2018 (NMBI, 2018) makes medication management explicit as a competency, it would be important to appreciate that a comprehensive, multi-factorial approach is crucial to optimising medication education.

Finally, there was inconsistency in reports about when medication education should be delivered. Globally, such education is provided at different stages: in second year (Coyne et al., 2013), third year (Krautscheid et al., 2011), or across all years of their education (Mettiäinen et al 2014). There is a need to investigate the impact of year of medication education on level of knowledge demonstrated.

This study has limitations. Only nurses from acute settings were interviewed; it is possible that nurses from community settings would have had different views on medication education. Secondly, findings are based on self-reporting only. Finally, a small sample size was used.

7. CONCLUSIONS

Registered nurses have concerns about the competence of student nurses in relation to medication management. Those nurses with more experience also voice concerns about newly qualified nurses, indicating that the education provided through nursing programmes

is not always adequate. Research in this area is limited to processes such as medication calculations. Considering the observations from participants in relation to other areas associated with medication management – such as interpretation of the Kardex – there is a need for more comprehensive investigation into this area. Modes of education were also discussed by participants, in both academic and practice settings. Within the practice environment, it is clear that preceptors require more support and guidance in educating students. It was proposed that education provided in the academic environment needs to be more practical, with various approaches to simulation recommended, in addition to presentations from practicing nurses. While such approaches may be validated in relation to other areas of education, there is a need to investigate if they can enhance students' medication knowledge specifically.

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