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Nurses' experiences of drug administration errors

Anne-Berit Schelbred & Randi Nord

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Correspondence to A.-B. Schelbred:
e-mail: anne-berit.schelbred@siv.no

Anne-Berit Schelbred MSc RN
Research Fellow
Vestfold Hospital Trust, Toensberg, Norway

Randi Nord MA RN
Senior Lecturer
Nursing Science, University of Oslo, Oslo, Norway

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Abstract

Title. Nurses' experiences of drug administration errors

Aim. This paper is a report of a study to describe the experiences of nurses who had committed serious medication errors, the meaning these experiences carry, and what kind of help and support they received after committing their error.

Background. Medication administration is an important nursing task. Work overload, combined with increased numbers and dosages of medication prescribed, puts nurses at risk of making serious errors. A drug error has the potential for disastrous consequences for patients. What is sometimes disregarded is the effect on the nurse involved. The majority of research on nurses and medication errors is framed within biomedicine, law and management.

Methods. An explorative, descriptive design was adopted and 10 in-depth interviews were conducted in 2003 with nurses who had committed a medication error. The text was analysed using a phenomenological method.

Findings. Serious medication errors can have a great impact on nurses, both personally and professionally. Reactions from significant others were central to the final outcome for nurses who made drug errors. They wanted to share their experiences, but this required confidence and trust. Nurses were generally willing to accept responsibility for their errors.

Conclusion. Strategies should be developed so that errors can be managed in a constructive manner, which includes exploring underlying causes and the counselling and support needs of the nurses involved.

Keywords: empirical research report, interviews, medication errors, nurses, qualitative research

Introduction

Drug administration is an important part of the nursing role. According to Gladstone (1995), this represents one of the highest risk areas in nursing practice and the potential for error makes it of grave concern. Gibson (2001), writing about the literature on medication management, explored how nurses and nursing are portrayed in relation with medication errors, arguing that the voice of nursing is mostly heard through the discourses of biomedical science, law and management. Only three studies (Gibson 2001) have addressed the emergence of a clinical nursing discourse, presenting opportunities for reframing nursing practice in relation with medication errors. In other words, the question about what it means to a nurse to

have made a medication error can either be overlooked or approached from a false premise.

Background

Although patients are the obvious victims of medication errors, nurses are affected by the same errors: they, and other members of the healthcare team, are the second victims (Wu 2000). Medication errors are costly in terms of increased hospital stay, resources consumed, patient harm and lives lost (Webster & Anderson 2002), but mistakes also have the potential for serious effects on the nurse involved, ranging from feelings of guilt and fear to loss of clinical confidence and disciplinary action (Gladstone 1995). Nurses involved in committing a medication error may be reluctant to report it unless there is obvious harm to the patient: 'the reluctance comes from fear of punishment, which could include corrective action, termination from work or a report to the State Board of Nursing for disciplinary action'. (Osborne *et al.* 1999, p. 34). Arndt (1994a) argues that it is not the fact of having made a mistake that provides the meaning that is inherent in such an experience, but the way it is handled and reflected upon. Arndt (1994a, p. 520) also states that 'the decisions made and the way the situation is handled by peers and superiors will have a bearing on the future personal and professional development of those involved'. Wolf *et al.* (2000) claim that understanding the personal responses of healthcare professionals to making medication errors could help alert management both to the support needed and that support is actually available in the clinical setting following such errors.

The study

Aims

The aim of this study was to describe the experiences of nurses who had committed serious medication errors, to explore the meaning these experiences carried, and to investigate what kind of help and support these nurses received after committing the error.

Design

An exploratory, descriptive design was used and interview data were collected in 2003 in Norway.

Participants

Through a feature in a widely distributed national nursing journal, we recruited a sample of registered nurses. The main criterion for participation was having been the main person involved in a medication error event which the Norwegian Board of Health defines as obligatory to report; events that led to, or could have led to, substantial injury to patients (Norwegian Board of Health 2004). Thirteen nurses responded, 10 of whom had committed medication errors that resulted in, or had the potential to result in (if not discovered or corrected in time), significant harm to the patient. We included these 10 in the study, while the remaining three nurses were excluded because they were not able to define the severity of the error.

The period since the error occurred varied from 1 to 10 years. Types of errors were: administering medication by the wrong route, to the wrong patient or giving the wrong drug or dose (e.g. 10 times the prescribed dose of morphine). Length of time in nursing varied from 6 months to almost 30 years when the error occurred. Some of the nurses were specialists. All were female. Seven worked in hospital settings, two in community services and one in a nursing home. One claimed that she had previously made a drug error, although with no injury to the patient; the remaining nurses maintained that they were not aware of having made any errors previously. In all cases, the errors were reported and appropriate action taken to prevent harm to patients. Despite this, one of the patients was severely and permanently harmed by the error. Nine of the 10 participants were still practising nursing.

Data collection

We conducted in-depth interviews with 10 nurses who had made a medication error and were prepared to talk about it. The interviews were conducted by ABS in Norwegian, which we have translated into English where quotations are used. All interviews were tape-recorded with the consent of the interviewees and started with a broad opening question: 'please tell me about your experience of making the medication error'. Follow-up questions were very open (e.g. 'how did it make you feel?' and 'what happened then?'). We devised a thematic guide for use in the interviews; addressing specific areas highlighted by the literature review, from our own clinical and scientific knowledge and modified this in the light of findings from a pilot study. The areas we addressed were:

- Immediate reactions when nurses realized that they had made an error.
- Nurses' emotional response to the error.
- Relations with patients and family after the error.
- Colleagues' and management's reactions to the nurses after the error.

- What kind of help and support the nurses received after the error.
- Nurses' candour about the error.
- How nurses coped with the incident.
- What impact the error had on nursing practice, individually and locally.

Seven interviews took place face-to-face and three by telephone. The interviews lasted between 1 and 2 hours. All the nurses claimed that they were participating in the study because it represented an opportunity to tell managers and colleagues what a devastating effect a medication error can have on a nurse, and that nurses who make such errors need help and support. Two weeks after the interview, participants were contacted by ABS to make sure that it had not placed too heavy a burden on them. Some of the interviewees said that the interview provided an opportunity to deal with the incident, especially those who felt that they did not get support from colleagues and management after the error.

Validity and reliability

To capture the essence of the experience of making a serious error in nursing practice, we used the thematic guide in all the interviews. The guide had a historic dimension relating with the nurse reactions, and a relational dimension. Documenting validity is always difficult, but we ensured data gathering systematically revolved around the two main dimensions. Answers and statements were systematically given 'on-the-spot' checks to clarify and confirm that what the nurses had said had been properly understood. This served as a control to secure the reliability of the interviews (Polit & Beck 2004). The interviews were transcribed by ABS (because of the sensitive nature of the topic), and notes of long breaks and crying were taken.

Ethical considerations

The study was approved by the Regional Research Ethics Committee. Potential participants were given written information about the study and written consent to participate was obtained. At the start of the interview, confidentiality of all information to be discussed was emphasized. In addition, interviewees' rights to refrain from answering questions was discussed and to end the interview at any point, if they so wished.

Data analysis

Interviews were transcribed immediately on completion and then data analysis begun using a procedural approach to phenomenological interpretation and analysis (Giorgi 1985, 1997). This philosophical phenomenological method is inspired by Husserlian transcendental phenomenology (Giorgi 1992) and encompasses three interlocking steps: (1) phenomenological reduction; (2) description and (3) a search for essences, which means the most invariant meanings for a context (Giorgi 1985, 1997, Beck 1994). The key point is to describe what presents itself, precisely as it presents itself, without adding or subtracting from it. Essences are attained when the researcher attempts to vary descriptive characteristics of the phenomenon to see what the essential characteristics of the phenomenon are. Bracketing (Giorgi 1992, Polit & Beck 2004), a way to ensure that researcher ambiguity and prior knowledge of the phenomenon does not intervene in the interpretation process, was used extensively.

Findings

The findings we present here do not cover the entire scope of our participants' experiences; they only give insight into the essentials. The themes that emerged from the interviews related strongly to the thematic guide, although we identified an additional theme: 'Reported to the Board of Health'. Within each theme, we attempt to highlight the essence, in addition to describing its characteristics.

Immediate reactions

Several nurses described how they felt shock and dread when they realized that they had made a medication error. There was initial disbelief: 'I could not believe that I had made such an error!' Some of them panicked. In their panic they felt paralysed, powerless and as if they had lost control. One nurse likened it to feeling as though she had died inside. However, their reactions did not stop them from acting appropriately. On discovering that they had made a mistake, all the nurses reacted immediately and did what they could to reduce any harm to the patient. None considered not reporting the error.

Emotional responses

The nurses used emotive language to describe how devastated they felt after the incident. Even though the patients in most cases were not permanently harmed by the error, our participants considered it to be a deeply traumatic incident, both professionally and personally. Some emphasized their feelings of guilt and shame, feeling that they had betrayed the patients, their colleagues and even their own family: 'I felt ashamed, making such a mistake, and that I abandoned

others' trust in me. I felt that I gambled with others' trust and love'. Two of the nurses told how depressed they felt even years after the incident, one of them because she was not able to forgive herself, even though her colleagues and managers tried to alleviate the blame she apportioned herself. The other nurse said her depression was because of the way the incident was handled by her superiors. Both of them had thoughts of committing suicide: one because she felt she could not continue living if the patient died, the other because she felt punished by the nurse manager.

Several of the nurses appeared to suffer posttraumatic stress syndrome, even years after the incident; they had insomnia and nightmares, and relived the incident mentally over and over again: ''I could walk down the street when it came to my mind, 'you did it!' It has lasted for years. And I feel at this moment; it will always be in my mind''. Participants worried about the consequences the error might have both for the patient, who might die or be significantly harmed, and for themselves in case they lost their colleagues' trust or faced lawsuits, imprisonment and loss of their authorization and job. In addition, nearly all experienced lack of self-confidence. They were afraid of making another error, and this fear created self-doubt and mistrust: 'every day became a test of how to get through the day without making a new mistake'. Making the medication error deeply affected their self-image. They struggled to accept their human fallibility and to create a new self-image: 'how can my words have any importance after this? Being a professional nurse has always been a part of my identity. The error was a severe threat to my identity'. Managing their feelings towards the patient, the family and the fact of having committed the error was difficult, and several of the nurses felt a strong need for distance, both physically and mentally. To achieve this distance they employed strategies such as not asking about the patient's condition and not talking about the medication error.

Relations with patients and family

With one exception, the nurses chose to tell the patient or family about the medication error, or to talk with them after the incident. Several felt a moral responsibility to inform the patient about the error, its consequences, and that they were responsible. Others told the patients about the medication error, but failed to disclose the possible consequences, or that they themselves were responsible. The latter was because they were ashamed and disappointed in themselves. In most cases, the patient and relatives sympathized with the nurse. Although none of the patients charged the nurses for the mistake they had made, most of the nurses avoided further contact: 'it was hard every time I had to meet the patient. It was painful'. Confronting the patient was difficult in itself and, additionally, the nurses were afraid of repeating the error.

Reactions from colleagues and managers

Colleagues and managers reacted in different ways. Some of our participants found that doctors, managers and colleagues provided support in a variety of ways. Some gave emotional support by comforting, or by sharing their own mistakes. In the case where the patient was severely and permanently harmed, the nurse was taken care of by her managers and colleagues: ''everyone said: 'we think about you and this is not only your fault. You are one of our best nurses'! And I got the chance to talk a lot about what happened and how I felt''. Such reactions helped in dealing with feelings of guilt and shame, fear and loss of clinical confidence.

Eight members of our sample were met by silence from colleagues and managers in dealing with personal consequences and in making a systematic exploration of the underlying causes of the error. Although some of them received a form of support from managers who told about their own mistakes, and from a doctor saying that making mistakes is a part of being human, this was not considered to be satisfactory. By keeping silent themselves, the nurses also failed to obtain support: 'I did not feel that I became excluded in any way. But not being excluded is not the same as being supported'. The degree of confidence the nurses felt towards to their colleagues and management was instrumental in whether or not they talked about the medication error.

Some colleagues reacted by minimizing the error. In doing this, they neglected the nurses' need for help to deal with the situation and their fears about what effects the mistake could have on the patient, and made light of the nurses' feelings of responsibility for the error. None of the nurses was exposed to criticism and reproach from other nurses or nursing assistants, although some felt that physicians blamed them for having made a mistake: ''the doctor said to me: 'you get your punishment when you see the patient'''. One nurse got strong, negative reactions from her managers. Even though the patient was not permanently harmed by the error, they reacted by denouncing her and making the error known to all the employees. They would not allow her to administer medication any more and, after a while, contrary to her will, she was transferred to another clinical activity. This nurse is now permanently unable to practise, and claims this is as a consequence of her managers' reactions to the mistake she made.

National Board of Health

Three cases were reported to the National Board of Health, a special body dealing with adverse events in specialist health services. In one instance, the case had not been brought to conclusion when the interview took place. The other two nurses had been acquitted of dereliction of duty by the Board of Health. They did not react to this decision with pleasure or relief, and they did not feel acquitted because they felt the Board of Health representatives acted in a threatening and admonishing way, and that the investigation process lasted for a long time during which they received little or no information about what was happening with their case.

Help and support after the incident

Only two participants stated that they were given help to deal with the situation by their management. In the case where the patient was permanently harmed by the error, the nurse got help from a professional skilled in dealing with people in crisis and judged this to be crucial in helping her through the crisis. The other nurse received help from her colleagues, including the head nurse, consisting of consolation and human support, but did not receive specialist crisis counselling; it was clear that involving skilled professionals was more efficient than managerial support alone. All the nurses had wanted help and all felt they would have benefited from personal and individual attention: 'I wish she (the head nurse) could have seen me. It seemed like she had forgotten it 2 days after I told her about it. She took it for granted that I could handle it on my own'. Although the nurses needed help, they did not express this wish to their managers. Several claimed that they did not have any expectations about getting support because they had made a mistake, and therefore had to bear the consequences themselves. One nurse, when speaking with her head nurse, referred to the error in a humorous way, in an attempt to reduce the significance of the incident, while another did not tell management that she needed help to handle the situation. Her silence was the result of a need for distance from the error.

Nurse candour

Most of the nurses chose to talk with people they knew would support and understand them, such as family members and friends, or colleagues with whom they had a close relationship. Our participants generally preferred talking with healthcare professionals, feeling that friends and family who were not members of the healthcare team lacked the foundation for understanding what they were going through: 'I did not feel that my husband understood what I was going through. I do not think he saw how painful this was for me'. Some nurses used their experiences with the medication error to give support and understanding to other nurses who failed in their nursing practice by mentioning that they too had made mistakes, and therefore knew how hard it could be. However, describing the details about the incident, for instance the serious consequences the error could have had for the patient, and their own extreme feelings of guilt and shame, was too much of a strain.

Coping with the incident

Our participants used different methods to cope with their experiences and feelings related with the medication error they had committed. For most of them, time was an important factor: as time went by, the anguish lessened. Several nurses chose to talk with someone about the incident in an attempt to heal the wounds. Despite the difficulties of returning to work, the nurses felt that doing so immediately had a significant impact on the healing-process: 'I think coming back to work was the greatest obstacle to overcome'. Two of the nurses tried to distance themselves from work by seeking further qualifications, reducing workload and changing their place of work for a while. Two sought the help of a professional psychologist to lessen the personal burden of the medication error, but neither found this contributed much to the healing process.

Impact of the error on nursing practice

The medication error had effects for the nurses on several levels. All said that their understanding and tolerance towards colleagues making mistakes had increased considerably. They were now capable of imagining how painful such an experience could be: 'I have a deeper insight in the sense of not judging other people so easily. My tolerance is much higher'. Several of the nurses claimed they had improved their routines related with drug administration and that their vigilance had increased. Although some said they became more conscious of reporting mistakes, in sharp contrast was the nurse who stated that her treatment by management and the Board of Health after the incident would make her more reluctant to report errors in the future, provided that the patient was not harmed by the error. For the nurse who was exposed to criticism and reproach by her management, the error was devastating to both her personal and professional life. She was no longer capable of working as a nurse, and although she did not feel disabled, she was in no position to find another job, yet felt embarrassed and ashamed of having

a profession in which she could no longer participate. The remaining nine nurses were still practising.

Discussion

Study limitations

As in any qualitative study, the sample is too small to allow generalization and it could be argued that our sample, being self-selected, was likely to be biased in the sense that, having had negative experiences, these nurses saw the research as an opportunity to unburden themselves. However, our sample also contained nurses who were satisfied with managers' handling of the incident and wanted to emphasize this; several even alluded to positive consequences for nursing practice. Thus, although there may be some bias, we claim that our findings make a relevant contribution to knowledge about this topic. However, the time lapse since committing the medication error may have affected the validity of participants' recollection while, as Polit and Beck (2004) suggest, there is always the possibility that respondents may present an unduly favourable image of themselves.

Experiences

It was clear that committing a medication error was traumatic for our participants and that, even years after, they still struggled to handle the stress caused by the error. The incident represented both a personal and professional threat and deeply affected their self-image, regardless of whether the patients were harmed or not. They blamed themselves for the error and accepted complete responsibility for their actions, just as Arndt (1994b) found, although she also claimed that being involved in a medication error can lead to the emergence of a more realistic picture of nursing, whereby nurses can become more empathetic with themselves and colleagues.

Angvik (1995a, 1995b), a specialist in clinical psychology, claims that when people are in a crisis, thoughts, emotional life, behaviour and physiology will be affected and are a mutual influence on each other. Several of the nurses in our study described how the drug error resulted in fear of making new mistakes, increasing distrust of themselves, a need to being checked up on, and also physical symptoms, such as sleeping problems. Angvik (1995a, 1995b) also emphasizes that if a nurse feels incompetent as a professional, this will cause depression or grief, manifested as withdrawal and distancing; those who do not break this cycle, may be at risk of suicide. In our study, two participants had considered committing suicide. One of our participants experienced such severe criticism and reproach that she was permanently unable to work as a nurse and, when the interview took place, still struggled to rebuild her shattered life. This type of extreme reaction arises from focusing too much on the actions of individual nurses when a medication error occurs, which can hamper effective improvements in safety (Anderson & Webster 2001), and result in failure to discover underlying contributory factors (Reason 2000).

Meurier *et al.* (1997) found two types of prominent emotional response after making nursing errors, internal and external. An internal response was associated with nurses feeling angry with themselves, making it likely they would take responsibility for the error, and thereby leading to constructive changes in practice. In external responses, anger was directed towards others and included fear of repercussions, making these nurses more likely to adopt defensive changes in practice and to become less confident and more anxious at work. These nurses tended not to report their errors. Arndt (1994a) claims that decisions made by nurses and significant others in medication errors have moral implications at personal, institutional and professional levels, and it may be that nurses' responses to errors are influenced by the reactions of professional and personal significant others. This may explain why some of the nurses reported what Meurier *et al.* (1997, p. 111) label 'distancing and self-controlling strategies' related with external responses. These strategies did not necessarily prevent them from taking responsibility for the mistake or adopting constructive changes in practice. Similarly, their need for physical or emotional distance was not necessarily related with adverse changes of practice, although some participants reported such negative changes which were related with how the situation was handled by significant others.

Follow up

Wolf (1994) and Gladstone (1995) claim that the way the management responds to the error depends on its consequences and on the reaction of the nurse concerned. Where nurses took full responsibility for the error, this resulted in lenient disciplinary consequences. As we have discussed, several of the nurses in our study chose to keep a distance from the patient and his relatives after the incident and did not discuss the error with their colleagues or managers after reporting it. One nurse who did refer to the error with her superiors did so in a light-hearted way. Such behaviour is not caused by a failure to accept responsibility or take the blame, but is a necessary and temporary defence mechanism.

Three cases in our study were reported to the Board of Health which behaved in such a way that one participant was

What is already known about this topic

- Medication errors are costly in terms of increased hospital stay, resources consumed, patient harm and lives lost, but mistakes also have the potential for serious effects for the nurses involved.
- The literature on how nurses are positioned in relation to medication errors is mostly framed in biomedical science, law or management discourses.

What this paper adds

- Committing a medication error was traumatic for nurses and the incident seen as a threat, both personally and professionally.
- Nurses need support from managers and colleagues after committing a medication error.
- A systems approach to human error in nursing practice is essential.

made to feel like a criminal and claimed that she would be reluctant to report errors in the future, especially if they had little or no consequences for the patient. This is similar to Arndt's (1994b, p. 28) finding that: 'nurses might not report mistakes for fear of a small incident having large disciplinary consequences'. Such an attitude is in sharp contrast to the need for an improved reporting culture, where organizations use such incidents to improve the quality of care.

Management reactions are central to the final outcome for nurses who make errors (Gladstone 1995). Most of those in our study did not receive any help from their nursing administrator, despite the fact that previous research (Arndt 1994a, Meurier *et al.* 1997) has shown that nurses need support from their managers, even if few actively sought it. Most of the nurses approached their family, friends and especially trusted colleagues for support, feeling confident they would find understanding and sympathy. There are two central interrelated issues in the managerial reaction. On the one hand, it is necessary to help nurses deal with personal grief and reactions; on the other is the necessity for a systematic exploration of practice routines and underlying causes of the error. Professional leadership demands dealing with both as interlocking issues, to ensure quality assurance within the area of drug administration.

For some of the nurses, their self-confidence was so shattered, that they felt unfit to continue working as a nurse and struggled to regain their professional and personal confidence. An important means of regaining their self-confidence was being allowed to carry on with their work as usual, including drug administration, and candour about the error made it easier to deal with it. Two of the nurses went to a psychologist to deal with the situation, but neither found this satisfying, and it seemed that support from colleagues and managers was the major factor in rebuilding professional confidence and self-acceptance.

Conclusion

Our study confirmed that medication errors can have devastating consequences for the nurses involved. Recognition must be given to the effects upon the nurses who make such errors and the support and help they need to deal with the incident acknowledged; every employer should have a plan for follow-up when an employee makes a medication error. Openness and a non-punitive approach appear to help nurses regain personal and professional self-confidence after having committed a serious medication error; conversely, a punitive approach may result in shattered lives and unreported medication errors in the future. Strategies should be developed so that errors can be managed in a constructive manner, which includes exploring underlying causes, retraining if necessary, managerial and collegial support and professional help, if needed, for those who are responsible to the error. Regulatory bodies should also be aware of nurses' need for information about their rights and the progress of their case.

Author contributions

ABS and RN were responsible for the study conception and design and ABS was responsible for the drafting of the manuscript. ABS performed the data collection and data analysis. ABS obtained funding ABS and RN made critical revisions to the paper. RN supervised the study.

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