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Identifying patients with high risk of readmission from the patient navigators' perspectives: a descriptive qualitative study

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Abstract

Background: Unplanned readmission incurs additional cost to patients and contributes to the rising healthcare cost of our nation. Although numerous studies have investigated the predicting factors that contribute to hospital readmission, the majority of the studies focused on clinical and patient-related factors, and were not from the perspectives of clinicians such as patient navigators (PNs).

Aim: To understand factors that predict patients' readmission risks from the PNs' perspectives.

Method: Using purposive sampling, PNs with a minimum of 10 years of clinical experience in the adult acute-care setting participated in the focus group interviews. Thematic analysis was adopted.

Findings: All 10 PNs agreed that the readmission risk assessment tool was useful as a guide to assess patients' risk of readmission; however, they also mentioned the use of clinical judgement and experience while assessing their patients. Three themes emerged from this study: (1) looking beyond medical-related issues; (2) social and community support; (3) functional status of patients.

Conclusion: Predicting patients' risk of readmission is closely tied to the patients' current medical conditions and caregiving needs. Ensuring individualised readmission risk assessment and identifying social issues early are key in ensuring a holistic discharge planning.

Keywords

Readmission risk, unplanned hospital readmission, patient navigator, thematic analysis

Introduction

Unplanned hospital readmission shortly after discharge is a major concern for both clinicians and healthcare administrators. Unplanned readmission incurs additional cost to patients and contributes to the rising healthcare cost of our nation. In 2013, the readmission rate for patients within 30 days after discharge from Singapore General Hospital (SGH) was 13.4%; however, it was unclear whether these readmissions were preventable. Hospital administrators are always examining ways to prevent unplanned hospital readmission. For example, in our organisation, a new role called 'Patient Navigator' was introduced in 2013 to help curb the rising hospitalisation readmission rate by coordinating and facilitating smooth transition of patients into the community. These patient navigators (PNs) are mostly senior nurses with at least 10 years of clinical experience. Their role is to manage and coordinate patients' care between acute-care hospital and intermediate long-term care with the primary aim to reduce length of stay for patients and prevent unplanned readmissions. Subsequently, the National

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Table 1. Semi-structured interview questions for the focus groups.

What do you think of the current NEHR readmission risk score for predicting readmission of patients?
If you were not given any tool or scale, how would you assess your patients for risk of readmission?

Electronic Health Record (NEHR) system was introduced in 2014 to integrate a seamless quality care for patients and to reduce the likelihood of predictable readmission. NEHR is a patient data exchange system that enables clinicians and health professionals to have a consolidated view of a patient's health record across the national healthcare network.[1] This system complements the PNs' work as it provides a comprehensive overview of a patient's admission and visit history, hospital inpatient discharge summary, laboratory results, medications history, past surgical and medical history and immunisation record. The PNs use this NEHR system in their daily work to assess and facilitate discharge care for their patients. NEHR also contains the readmission risk assessment scoring tool that helps the PN to determine which patients are at risk of readmission to the hospital.

Unplanned hospital readmission is seen as a marker for inpatient care quality in Singapore.[2] Factors contributing to hospital readmissions have been well documented in the literature. Many studies focused on predicting the factors associated with readmission using a retrospective case-control approach and were carried out mainly in western countries. A retrospective case-control database study done in the United States identified several factors that were predictive of 30 days readmission among patients with type 2 diabetes and they were diabetic treatment escalation; race; type 2 diabetes diagnosis prior to the index stay; pre-period heart failure; and number of pre-period, inpatient healthcare visits.[3] Similarly, a case-control study done in the United Kingdom found that patients aged age 80 years or older, five or more medical conditions, history of depression and lack of documented patient or family education were the risk factors associated with unplanned readmissions for patients aged 65 years or older.[4] However, this study only looked at patients aged 65 years old and above and did not consider the primary diagnosis as a contributing factor to readmission risks.

Most studies focused on determining clinical and patient-centred risk factors associated with readmission via predictive models. Only few have explored the viewpoints of healthcare professionals on the risk factors of unplanned readmissions. A focus group interview was done in Portland to explore the perspectives of healthcare professionals and administrators on the discharge process of patients and drew recommendations from them to provide better transitions of care from hospital to home.[5] In another qualitative study, nurses were interviewed on their perspectives on reasons for readmission of heart failure patients.[6] Given the varying patient populations, treatment of care and hospital policies, it is challenging to establish a common set of factors for predicting readmissions in our patients. Therefore, there is a need to determine the risk factors associated with readmission pertaining to the local context in view of the different culture and health care structure.

Nurses play a key role in the discharge planning of patients. The implementation of PNs in Singapore is an initiative to ensure a smooth transition of care from acute-care hospitals back into the community. There have been many studies that looked into factors predicting readmission; however, they were mainly focused on clinical and patient-centred factors and not from the perspectives of experienced clinicians. Hence, this study aimed to understand from the PNs' perspectives the factors that are likely to accurately predict readmission risk. Given their clinical experience in managing patients' discharge issues, it would be valuable to explore their viewpoints and elicit factors that are not already captured by previous studies.

Method

Design

A descriptive qualitative study design was adopted. This study design is best suited for this qualitative inquiry because it provides a comprehensive summarisation, in everyday terms, of specific events experienced by individuals or groups of individuals.[7] Thus a focus group using semi-structured interview questions was conducted to elicit the PNs' perspectives on the factors that were likely to predict patients' readmission risk that were not captured by the NEHR risk assessment tool (Table 1).

Participants

Purposive sampling was used to recruit the participants. The inclusion criteria were PNs who managed patients in the medical and surgical adult inpatient wards in SGH, who had a minimum of eight months of experience using the NEHR system and had at least of 10 years of clinical experience. A total of 10 PNs were recruited. All of them had been in the PN role for at least a year. There were five PNs in each focus group. The first focus group interview involved PNs from the medical discipline and the second focus group PNs from the surgical discipline.

Ethical considerations

Ethics approval was obtained from the SingHealth Centralised Institutional Review Board. Written informed consent was obtained from all PNs before conducting the focus group interviews.

Data collection

Two focus group interviews were conducted. Each focus group consisted of five PNs from both the medical and surgical discipline respectively. Each focus group interview took about 45–60 min to conduct in order to allow every PN to share their views and to reach data saturation. One research team member carried out all interviews with another

member as her moderator. All interviews took place in a quiet meeting room in the hospital to ensure privacy. All interviews were audio-taped and transcribed verbatim. In order to increase credibility and dependability of data, all interviews began with this key question: "As a patient navigator, who has been handling the NEHR system, please share your experiences using the readmission risk assessment score." Probing words such as 'why' and 'how' were used to elicit deeper understanding.

Data analysis

Thematic analysis is a principle method for qualitative data analysis through discovering, analysing and reporting themes which have been emerged from data.[8] Using a thematic approach, an inductive content analysis was conducted to code data and analyse using the six steps of Braun and Clarke.[8] The first step was familiarising with data. In this step, the content of recorded focus group interviews were transcribed verbatim and the researchers immerse themselves in the data by reading and rereading the transcribed audio recordings and making notes. The second step was initial coding. Participants' statements were coded thoroughly and in accordance to the whole data. The third step was to look for themes in which the coded data were reviewed to identify areas of similarity and overlapping between codes and put them together to form the initial themes. The fourth step was reviewing themes in relation to the coded data and entire data set to generate a thematic map. The fifth step was defining and naming the themes in which the entire process of analysing was reviewed to refine the characteristics of each code in relation to the entire data. The last step was reporting the findings according to the research aim. With the transcriptions, the authors performed initial coding, formed the initial themes, and refined named the extracted themes. All themes were further clarified, discussed and agreed by all the authors in this paper.

Rigour

All authors had immersed themselves with the data during the transcription and coding process. The initial codes that were gathered were checked and confirmed among members before confirming on the final themes. To ensure dependability, the process of the data collection was similar for both the medical and surgical focus group. A pilot focus group was also conducted before the actual focus group interviews to ensure that the interviewer and moderator were well-versed with the process and the same interviewer and moderator conducted both the focus group interviews.

Findings

A total of 10 PNs were interviewed. The PNs interviewed had varying clinical experience and their average years of experience were 23 years. The profiles of the PNs are presented in Table 2.

All PNs in both focus groups agreed that the readmission risk assessment tool was useful as a starting guide to assess their patients' risk of readmission; however, they have also mentioned the use of their clinical judgement and experience to assess their patients further. Three themes that emerged from the focus group interviews were: (1) looking beyond medical-related issues; (2) social and community support; (3) functional status of patients. Examples of each theme and subthemes are presented in Table 3.

Table 2. Profiles of the patient navigators (PNs).

Participant	Discipline	Working experience as a nurse (years)	Working experience as a PN (years)
M1	Medical	15	1.5
M2	Medical	>30	>1
M3	Medical	11	>1
M4	Medical	24	1.5
M5	Medical	30	1.5
S1	Surgical	14	1
S2	Surgical	17	1.5
S3	Surgical	33	>1
S4	Surgical	41	1.5
S5	Surgical	17	1.5

Table 3. Schemes and subthemes that emerged from focus group interviews.

Themes	Subthemes
Looking beyond medical-related issues	Anticipate future needs due to medical complexity
	Patients' ability to cope and manage
Social and community support	Having a social support network
	Caregiver's coping abilities
	Caregiver's willingness to care
	Awareness and access to community resources (for both caregiver and patient)
Functional status of patients	Assessing patient's current needs
	Needing multiple service providers

Theme 1: looking beyond medical-related issues

Having chronic medical conditions is a strong indicator of patients having high risks of readmissions. PNs shared that nurses have to look beyond patient's medical issues and problems to manage their care better. Patients' conditions can be complex and many other factors could affect their medical and nursing management.

Subtheme 1: Anticipate future needs due to medical complexity. Nurses need to look beyond patients' current caregiving needs and home situation to determine if patients require additional help in managing their care. Certain group of patients such as oncology patients are anticipated to have more difficulties with coping at home and has higher chance of readmissions due to their disease process and the treatments they receive. On the other hand, even if a patient appeared to be at low risks of readmission, nurses should also anticipate potential caregiving needs and issues that might arise due to the patients' conditions.

> Patient is under low risk when we enter the scoring (in the NEHR system), but when you look further into the patient, patient may have NGT (nasogastric tube), and then have IDC (indwelling catheter). So when patient has all these, I would think that the patient has high risk of readmission because NGT has high risk of aspiration. Because if the carer is not well versed with patient care, definitely you know patient will have you know (pause) … readmission into the hospital. [M1]

> Patient has cancer … they have the tendency to get … their condition become worse, every time. In fact, sometimes when their condition worsen, they may even get fracture, and so on … so these are already indicators that these patients requires care, more care, with cancer itself, with advanced stage of cancer, you probably requires more services, meaning to say, in terms of the home help needs, or in term of medical care, in term of the appointment consolidations, and so on. [S2]

Subtheme 2: Patients' ability to cope and manage. The ability of patients to cope and manage their medical condition at home is another crucial factor in predicting readmission risk. The PNs shared that although some patients may appear to be high risk of readmission according to the risk assessment score, the nurse still need to assess further on their ability to care for themselves, their attitudes towards self-care and the availability of resources to self-manage. For example:

> Is the patient psychologically strong enough to take care to learn to take care of herself? Is she the type who says anything wrong, go to hospital or she has got the mentality to say anything I won't turn back to hospital. So it is two different things. Yah. So if those whom I think that they are emotionally not strong I will make sure I tag on the patient closely, call her very often just to give her that psychological support and then she won't turn back. [M4]

> The thing is that nowadays we have seen more educated patients; they are more well versed in their medical condition. So … because this kind of patient, they know how to manage their symptoms, they know what to do. So in term of interventions as PN trying to advise them, we only can reinforce to them. When we talk to them about education and all that, they are actually aware. There is not much help that they actually need. So sometimes I feel that some patients … to a certain level you meet the criteria (High readmission risk score), but they don't really need much help … interventions from navigators. [S1]

When patients cannot manage, their non-compliance to care can also increase their chances of readmission.

> However, sometimes most time of our cases are actually patients who are younger, they still readmitted, because more of their medical issues. They can't manage their medical issues. For instance, issues like non-compliant to medication, or not compliant to their fluid restriction and all that, that's the reason why they come in to the hospital. [S2]

Theme 2: Social and community support

Having the right social and community support is important to prevent patients from unnecessary readmissions. The PNs elaborated that having a discharge destination includes having an appropriate carer. The caregivers' coping abilities and willingness to care for the patients should also be evaluated as they are the main pillars of support for the patients. Patients and family members should be educated on information pertaining to community support services and resources that are available to them and how to access it.

Subtheme 1: Having a social support network. Nurses shared that having a discharge destination is not only about the patients having a physical place to stay after discharged, but also to have good social support when they leave the hospital especially for patients who stay alone. They will need more support as compared to patient who has caregiver or family's support.

> Because some patients, there is not much to do for their medical condition, but more of social intervention. It's more of, because sometimes there is no main carer, or they were left alone at home. That's why you need to try and get service on board to… you know, make sure…they have high risk on fall, for example, then you need to make sure that there are some services on board to help support patient at home. [S1]

> So … what about the social support is the social support there or not there. Because if they are alone, if they have social support they have somewhere to go to or they have someone to turn to they can call. [M4]

Subtheme 2: Caregivers coping abilities. Assessing the caregivers' coping abilities and comfort level during discharge planning is needed to ensure a smooth transition from hospital back to home. Often, patients return home with new needs that require caregivers' attention and sometimes even competence. However, the short transition time from hospital to home is often not enough time to prepare the caregivers' competency to handle the care demand. This may lead to unplanned hospital readmissions as the caregivers were unable to cope.

> For example, when patient developed fever at home and their family members are not comfortable with bringing patient to the polyclinic or GP (general practitioner) and they are more comfortable with hospital they would just bring in the patient to hospital even though there are a lot support services for example transitional home care that we can just bring … call the doctor and the nurses for home visit. [M3]

> Patient got new NGT or new IDC you have to collaborate with the family members, caregiver training and also to see if they have any carer. Also, how comfortable are they to take care of the patient at home. [M3]

> Because if the carer is not well verse with patient care, definitely you know patient will have you know (pause) … readmission into the hospital. [M1]

Subtheme 3: Caregivers' willingness to care. Besides caregivers' coping abilities, their willingness to care for the patient is equally important. If the caregivers are not willing to care for the patient, it will be more likely for patients to be readmitted due to social issues.

> Subsequently when she was discharged from the rehab hospital the son bring her back to the hospital again because the son also

> cannot cope, the son is not willing to look after the mother. So they turn back to hospital. [M4]

Subtheme 4: Awareness and access to community resources (for both caregiver and patient). Patients' and caregivers' level of awareness and access to community resources can affect their risk of readmission back to the hospital. Some patients and caregivers can be very informed with the support services in the community and manage the patients' condition well. When patients and caregivers were well informed and have access to community resources, they required less PN interventions and have a lower possibility of unplanned readmission.

> I would also like to find out what other services that is existing for the patient also. Because you also want to know whether are they still continuing the service or has discontinued, and what is the reason for discontinuation. [S1]

> When I asked further, they (caregivers) actually don't need it (community resources referrals). They are very good with the care of the patient. And they know where to get all the resources. I have one patient; his caregiver refused all the help from us. The caregiver was very resourceful; he knew how to get all the tubes, where to get the PEG and all the items. In the end I close the case (no follow up) because he refused everything. [M1]

Theme 3: Functional status of patients

Patient's current functional status determines the types of intervention and referrals required. Every admission is unique and so does the patient's hospital readmission risk. A patient with low risk of readmission on the previous visit may not necessarily remain low for the current admission. Hence, the functional status and care issues of the patient need to be reassessed on every admission.

Subtheme 1: Assessing patient's current needs. The level of care anticipated upon discharge need to be re-evaluated at the beginning of every admission based on patient's current condition.

> How is the patient in real life? How is the real life situation and the patient's functional status, and how best we can help the patient to be discharge with relevant community services? [M3]

Subtheme 2: Needing multiple service providers. When a patient required more interventions or their care dependence increased, it was a cue that the patient needed more extensive discharge planning and services in order to prevent future unnecessary readmissions.

> That means a lot more interventions, whereby we need to liaise with physiotherapist. We need to liaise with occupational therapist, dietitian especially when patient's functional declined. With speech therapist (…) It all depends whether how fast we do the intervention, and how slow and the slower we intervene the longer patient will stay, the faster we intervene the smoother is the process of the discharge. [M3]

> The patient comes for shortness of breath, for nursing part we will look into more on functional decline… is there a recent functional decline or patient is currently bedbound? Next, I will look into how or where is the caregiver? Is there any support from the family? In a way trying to look into the discharge planning and any social issues. [M2]

Discussion

A holistic assessment is needed in order to do a comprehensive discharge planning and prevent unplanned readmissions. Although equipped with readmission risk assessment scoring tool to help with the screening of patients, the PNs did mention some inadequacy of the tool to identify certain groups of high-risk patients. Hence, seeing the patient as a whole ensures that the needs of the patients and caregivers will not be overlooked. When performing a discharge planning, factors such as the patient's family dynamics, carer issues, personal and emotional needs are important considerations that were highlighted by the PNs.

Research has shown that chronic medical conditions are associated with high readmission rates in acute-care hospitals.[2,3] This study found that there is a need to look beyond medical issues to identify the unmet needs of the patients such as requiring more caregiving help and the ability of patients to cope and manage their condition. Due to the medical complexity, PNs performing discharge planning have to actively anticipate the potential needs in terms of caregiver training, availability of care equipment, arranging appointment, transport and financial assistance for these patients.

In addition to anticipating potential care needs, patients' understanding of their medical condition and their self-management skills are important factors that will determine patients' ability to cope at home. Bauer et al. concluded that assessing patients' levels of involvement and coping abilities and provision of adequate information during the discharge process are important to prevent unnecessary readmissions.[4] Patient empowerment is a key factor in reducing unplanned hospital readmissions.[9] Previous studies have also shown that equipping patient with relevant disease and medication knowledge can greatly reduce their chance of readmission.[5,9–11] Education on patients' knowledge of identifying early warning signs for relapse and improving patients' adherence to prescribed treatment and management regimens should also be enhanced to minimise avoidable readmission relating to patient factors.[6]

Besides patients, the PNs also identified the caregiver's coping ability and willingness to care as factors that have great impact on patients' readmission risk. Likewise, a recent review highlighted that the assessment of caregivers' involvement and willingness to undertake the caregiver role, their specific needs and the resources they need to carry out the role are essential for an effective discharge planning.[4] Caregiving is stressful especially when faced with negative emotions and disagreement among family members.[12] Therefore, having a good social support and access to community resources are necessary to help patients and their caregivers cope better.

This study has found that social and community support is crucial in preventing unnecessary hospital readmission. Having a good social support will assist patients to transit back to their homes with adequate help. Being well informed and having access to community resources would help patients and caregivers with their post-discharge needs. Likewise, previous

focus group interviews conducted with a group of healthcare professionals concluded that coordination between acute-care hospitals and community service provisions were highlighted to be an important component of an effective discharge planning.[10] The study done by Bauer et al. also found that access to community health services, support groups and counselling were associated with positive outcomes for the patients.[4]

The current functional status of the patients was highlighted in this study to be a predictor of potential unplanned hospital readmissions. Functional status such as patients' cognitive status, physical status and their ability to perform the activities of daily living can change due to comorbidities and disease progression. Previous studies also agreed that a decline in functional status has a great impact on the level of caregiving required and can lead to increased caregiver stress.[13,14] As patients become more dependent on their caregivers for their daily needs, the level of caregiver burden also increased.[15] When both the patients and caregivers cannot manage, it can lead to readmission to the hospital. Therefore, declining functional status of the patients is a good measure for PNs to assess the amount of help and resources required for both the patients and family, in order to ensure a smooth transition back home.

Limitations

The PNs who participated in this study were senior nurses with many years of clinical experiences, hence the findings may differ if a junior group of PNs were interviewed. This study was conducted in an adult teaching hospital, therefore, the experience of the discharge process may be different across other local care setting.

Conclusion

The period following discharge is a vulnerable time for both the patients and caregivers. In addition to using readmission risk assessment tool to assess patients, the clinical judgement of nurses is also much needed when doing discharge planning for the patients. Nurses play an important role in assessing and preparing patients and caregivers of the transition from hospital to home. A comprehensive discharge planning, which involves a holistic assessment of patients' current medical condition, functional status, coping abilities, level of social and community support and their caregiving needs, is key to prevent unplanned hospital readmission.

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Declaration of conflicting interests

The authors declare that there are no conflicts of interest.

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