Original Articles

Patients' Discharge Information Needs Regarding Myocardial Infarction in Bangladesh

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Abstract

Objectives: *This study aimed to identify the level of patients' discharge information needs regarding myocardial infarction in Bangladesh.*

Methods: *A descriptive, cross-sectional study was conducted at the National Institute of Cardiovascular Diseases and Hospital (NICVD), Dhaka, Bangladesh. The work of Gerard and Peterson (1984) was integrated to the conceptualization of patients' needs. Data were collected from 130 myocardial infarction (MI) patients by using the Modified Cardiac Patient Learning Need Inventory, Patient Version (MCPLNI-Patient). The content validity of the instrument was examined by three experts and the reliability was obtained by using Cronbach's alpha coefficient yielding value of 0.90. Descriptive statistics were used to analyze the data.*

Results: *Patients with MI reported needs for discharge information at a high level (M = 4.40, SD = 0.37). All eight categories of discharge information needs were at a high level. The most important discharge information needs were related to medication, followed by symptom management and dietary information.*

Conclusion: *The study identified the level of discharge information needs of patients with MI. The result of this study will provide as essential information for an effective cardiac education plan for patients with MI in order to prevention of further readmission and death.*

Keywords: myocardial infarction patients; discharge information needs

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Background and Significance of the Problem

Cardiovascular diseases (CVD) including myocardial infarction (MI) have increased in low and middle-income countries and it takes place more than 80% of all global CVD deaths (World Health Organization, 2011). In Bangladesh, the ischemic heart disease is the first leading cause of death that represents 12% of all deaths in this country (Chronic disease: An emergency priority in Bangladesh, 2009). Nowadays, patients with MI gain benefit from rapid diagnosis by using new technology and devices and timely intervention resulting in increased survival rate, a shorter length of hospital stay.

Early discharge from the hospital means that the patients need to continue care at home. Appropriate discharge information given to patients and families can manage the gap of this care in the home setting. One study found that patient-focused, nurse-delivered discharge information increases self-care adherence, improves the clinical outcome and reduces the cost of care (Koelling, Johnson, Cody, & Aaronson, 2005). Successful self-management for recovery at home can be ensured by meeting the patients' information needs prior to hospital discharge (Maloney & Weiss, 2008). Reasonably, people want to learn what they perceive as important to them.

In Bangladesh, there is no known study related to patients' perception about discharge information needs. Therefore, detecting the perception of patients with myocardial infarction regarding their discharge information needs in Bangladesh would be beneficial. This knowledge will be helpful for an effective cardiac education plan for patients with the myocardial infarction, and perhaps this may also lead to prevention of further readmission and death.

Objective

To describe the level of patients' discharge information needs regarding myocardial infarction.

Conceptual Framework

The work of Gerard and Peterson (1984) was integrated to the conceptualization of patients' needs. They conceptualized the learning needs of cardiac patients and categorized them into eight categories: Introduction to CCU, anatomy and physiology, psychological concerns, risk factors information, medication information, dietary information, physical activity information, and miscellaneous information.

For the purpose of this study, the researcher modified Gerard and Peterson's conceptualization and tool devised by Gerard. Specially, "Introduction to CCU" was deleted and the category "Symptom management" was added similar to Turton's study (Turton,

1998).

In Turton's study, the instrument, the Cardiac Patient Learning Need Inventory (CPLNI) was modified prior to the pilot study by removing the category entitled as 'introduction to CCU' as well as six other items of information, since it was considered inappropriate for patients following hospital discharge. On the basis of the result of pilot study and subjects' suggestion, the instrument was modified again by the using of 'life style factors' instead of the term 'risk factor' and added the category symptoms management. The category symptoms management was consisted of six items. Thus, the instrument in Turton's full study was consisted of 38 items in eight categories. The result of this study showed that the newly added category, the symptoms management rated either first or second rank by all of three groups (patients spouse/partner and nurses). However, in this present study the term risk factor remained as original study of Gerard and Peterson (1984).

Methods

A descriptive, cross-sectional study was conducted. The approval was obtained from the Research Ethics Committee of the Faculty of Nursing, Prince of Songkla University, Thailand, and from the Director of the National Institute of Cardiovascular Diseases and Hospital (NICVD), Dhaka, Bangladesh.

The data were collected at the post coronary care unit (PCCU), general wards and cabins (single patient's rooms) of the NICVD between October, 2013 and January, 2014. A total of 130 MI patients were selected based on the following inclusion criteria: (1) confirmed diagnosis of MI by a physician, (2) able to read and understand Bangla language, (3) be mentally competent and able to participate in the study, and (4) be declared discharged by a primary physician.

Data Collection Instruments

The questionnaire used to collect data in this study included 2 parts: 1) the demographic and health-related data form, and 2) the Modified Cardiac Patient Learning Need Inventory, Patient Version (MCPLNI-Patient). The demographic and health-related data form consisted of age, gender, marital status, level of education, religion, occupation, monthly income, duration of admission, duration of having MI, history of previous admission with cardiac problem, family history of MI, reason for the current admission, smoking habits, underlying disease and perceived severity of illness. The 38-item MCPLNI-Patient was used after modification of CPLNI developed by Gerard (Gerard & Peterson, 1984). It composed of eight categories: anatomy and physiology (5 items), psychological concerns (4 items), risk factors (4 items), medication (5 items), dietary (5 items), physical activity

(5 items), symptom management (6 items), and miscellaneous (4 items). It was used to assess the level of discharge information needs of patients with myocardial infarction. Each item is rated on a 5 - point Likert-type scale ranging from 1 = not important, 2 = somewhat important, 3 = moderately important, 4 = important, and 5 = very important.

The total MCPLNI-Patient score for 38 items had a range from 38 to 190. The total and subscale scores were computed by summing all items in those categories, then averaging by the total number of items. Thus, the possible ranges of scores were similar, ranging from 1 - 5. They were further categorized into three levels: low/least important (1 - 2.33), moderate/moderately important (2.34 - 3.66), high/highly important (3.67 - 5.00). The content validity of the instrument was tested by three experts and was translated from English version to Bangla version by using three bilingual translators. The reliability was obtained by Chronbach's alpha coefficient with value of 0.90.

Data Collection

After the approval from the local authorities was obtained, potential participants were explained about details of the study and were informed that they had the right to withdraw from the study any time with no harm. Participants who decided to participate in the study were asked to sign the consent form. After signing the informed consent form, the researcher provided the questionnaire to the participants and lastly collected them for data analysis.

Data Analysis

Demographic and health-related data, and the Modified Cardiac Patient Learning Need Inventory, Patient Version (MCPLNI-Patient) were analyzed by using descriptive statistics.

Results

Participants age ranged from 24 to 90 years with a mean of 53.61 years (SD = 11.65) and the highest number of them had age between 50 - 59 years (32.3%). A majority of them was male (81.5%), married (95.4%), and Muslim (89.2%). The educational level was mainly primary school (52.3%). About one-fourth were private employees (23.9%). One-third of the patient (33.1%) had an average monthly income between 10,000 - 20,000 Taka. Another one-third (33.1%) had no income (Table 1).

Table 1 Frequency and Percentage of Patients' Demographic Characteristics (N = 130)

Demographic Characteristics	n	%
Age (years)		
< 40	11	8.5
40 - 49	37	28.5
50 - 59	42	32.3
60 - 69	25	19.2
70 and higher	15	11.5
M = 53.61, SD = 11.65, Min - Max = 24 - 90 years		
Gender		
Male	106	81.5
Female	24	18.5
Marital status		
Married	124	95.4
Widowed	6	4.6
Level of education		
Primary school	68	52.3
High school	39	30.0
College	14	10.8
University	9	6.9
Religion		
Islam	116	89.2
Hindu	14	10.8
Occupation		
Farmer	12	9.2
Government employee	18	13.9
Private employee	31	23.9
Business	24	18.4
Retired	29	22.3
Housewife	16	12.3
Income per month (TK; 1TK= 0.46 Baht)		
No income	43	33.1
1,000 - 5,000	8	6.1
5,001 - 10,000	26	20.0
10,001 - 20,000	43	33.1
>20,000	10	7.7

Duration of admission of the patients ranged from 2 to 23 days with a median of 6 days and being diagnosed from 2 days to 13 years with a median of 10 days. Nearly half of the patients (44.6%) had history of previous admission with cardiac problem for

several (1 - 15) times with a median of 1 time. One-third of them (33.1%) had the family history of ischemic heart disease. Approximately two-thirds of the patients admitted for medical reason or medical interventions. Nearly two-thirds of the patients (62.3%) had smoking habit and among these patients, more than half of them were ex-smokers (59.3%). Nearly two-thirds (64.6%) had underlying disease including DM (31.5%), HTN (45.4%), kidney diseases (3.1%), lung diseases (6.2%) and gallstone (0.8%). Patients perceived their illness as moderately to highly severe (Mdn = 7.00, IQR = 2) (Table 2).

Table 2 Frequency and Percentage of Patients' Health-Related Characteristics (N = 130)

Health-related characteristics	n	%
Duration of admission (days)		
Mdn = 6, IQR = 25, Min - Max = 2 - 23		
Duration of being diagnosed of MI (days)		
Mdn = 10, IQR = 85, Min - Max = 2 days - 13 years		
History of previous admission with cardiac problem		
No	72	55.4
Yes	58	44.6
Mdn = 1, IQR = 1, Min - Max = 1 - 15 times		
Family history of ischemic heart disease		
No	87	66.9
Yes	43	33.1
Smoking habit		
No	49	37.7
Yes	81	62.3
Types of smoker (n = 81)		
Current smoker	33	40.7
Ex-smoker	48	59.3
Underlying disease		
No	46	35.4
Yes	84	64.6
DM	41	31.5
HTN	59	45.4
Kidney diseases	4	3.1
Lung diseases	8	6.2
Gallstone	1	0.8
Perceived severity of illness		
Mdn = 7.00, IQR = 2, Min - Max = 0 - 10		

Patients with MI reported needs for discharge information at a high level with a mean score of 4.40 (SD = 0.37) (Table 3). The patients perceived the discharge information needs of all categories at high levels. Medication information rank in the first (M = 4.82, SD = 0.26) followed by symptom management (M = 4.80, SD = 0.25), dietary (M = 4.52, SD = 0.34), anatomy and physiology (M = 4.30, SD = 0.63), physical activity (M = 4.27, SD = 0.65), risk factors (M =4.17, SD = 0.60), psychological concerns (M = 4.03, SD = 0.61), and miscellaneous (M = 3.99, SD = 0.59) respectively (Table 4).

Table 3 Frequency and Percentage of Level of Patients' Discharge Information Needs of Patient With MI (N = 130)

Level of information needs	Possible score	n	%
Low	1 - 2.33	0	0.0
Moderate	2.34 - 3.66	3	2.4
High	3.67 - 5.00	127	97.6
M = 4.40, SD = 0.37, Min-Max = 3.42 - 5.00			

Table 4 Means, Standard Deviation, and the Levels of Patients' Discharge Information Needs of Each Categories of Patient With MI (N = 130)

Subscales	M	SD	Level
Anatomy & Physiology	4.30	0.63	High
Psychological concerns	4.03	0.61	High
Risk factors	4.17	0.60	High
Medication	4.82	0.26	High
Dietary	4.52	0.34	High
Physical activity	4.27	0.65	High
Symptom management	4.80	0.25	High
Miscellaneous	3.99	0.59	High

Discussion

The patients participating in this study had characteristics typical to patients with MI from other parts of the world. They were late middle-aged adults, male, and smokers who had underlying disease or co-morbid disease, hypertension and diabetes, especially. Aging, male gender, smoking and co-morbidity are well-acknowledged as major risk factors to MI (Morton, Fontaine, Hudak, & Gallo, 2005). One factor that the Bangladeshi patients may be different from patients with MI in Western and European countries was that the majority of them were low (no income - < 10,000 TK/month) to moderate (10,001 -

20,000 TK/month) income groups.

A recent study (Li et al., 2014) found that the individual with low socioeconomic status had the higher risk for cardiovascular events including MI. The fact is that this low socioeconomic status group may have low literacy. Therefore, they may have limited knowledge of cardiovascular disease and limited access to health care resources. Raising unemployment rate was also suggested as a contributing factor to the increasing trend of acute MI occurrence in low socioeconomic countries and Bangladesh has no exception in this regard.

In Bangladesh, most of low income group of patients with MI struggle to afford the essential medicine (Zahan, 2013). This situation may affect their own care and may lead to limit their willingness to seek information. They usually may pay attention mostly with their job. The current study also made an additional analysis and found that the lower income group perceived comparatively lower discharge information need than the higher income group ($\chi^2 = 10.17$, $p < 0.05$).

The increasing trend of MI is now a public issue for making awareness among Bangladeshi people to prevent readmission and death. Bangladeshi people may have less knowledge on the disease and its prevention (Rankin & Bhopal, 2001). In this situation, mass media e.g, television, local newspaper, radio and internet resources may play an important role for promoting health messages or information (Booth, Bauman, Oldenburg, Owen, & Magnus as cited in Shilton et al., 2001). The information of these sources may be insufficient or limited. As a result, the patients with MI participating in this study reported their discharge information needs regarding myocardial infarction at a high level. This situation flags an urgent need of offering key information in the area of the disease and its prevention by healthcare providers, particularly by nurses.

Patients reported discharge information needs at a high level also may be related to their perception about the severity of illness at a moderate to high level. The perception of severity of illness can influence the information needs of the patients with myocardial infarction (Polikandrioti & Babatsikou, 2013).

The patients' discharge information needs may be influenced by some other factors. Additional analysis in this present study showed that patients who were less than 60 years old and had female gender responded their higher level of discharge information needs compared with those more than 60 years old and being male ($Z = -2.76$, $p = < 0.01$; $Z = -1.94$, $p = 0.05$, respectively). Opposite to this present study, Timmins and Kaliszer (2003) and Smith and Liles (2007) found that older patients reported more information needs than younger patients. These may be due to the fact that the MI occurrence is high in the young age group in Bangladesh. For gender difference, female patients reporting higher

level of information needs was not surprising. Generally, women tend to be attractive to their health. Previous studies showed that females made much more use of health service than men did (Gerristen & Deville, 2009; Keene & Li, 2005)

In this study, according to the rank order, the highest discharge information need perceived by patients was the medication information. The symptom management category was ranked as the second, followed by dietary information. The three least but still high in the level of importance were miscellaneous information, psychological concerns, risk factors according to lowest to highest rank order.

The medication information ranked highest place may reflect the patients' desire to adhere with their treatments and to avoid future problems (Chan, 1990). As a result, they may want to understand all necessary information related to medication being taken. They may also concern about money to get medications. Unlike other countries, in Bangladesh patients must pay for most of their medication bills as there is inadequate health care coverage, particularly for the poor. The Health Bulletin report of the Bangladesh government which indicated 42% of health facilities paid by government and 64% paid by the private sector (Government of the People's Republic of Bangladesh, 2011). As a consequence, they may want to know all information related to medication and consequences of not taking it. In many of the previous studies, medication information was ranked in one of the top three areas of information need by the patients with MI (Bailey, 2004; Chan, 1990; Gerard & Peterson, 1984; Karlik & Yarcheski, 1987).

Symptom management is the second important category of information need rated by the patients. This information may be related to perceived risk for survival (Smith & Liles, 2007; Timmins & Kaliszer, 2003). When symptoms occur to patients with MI, they think they will die. As a result, they may want to know if there will be similar symptoms occurred after discharge, how they will manage at home. Patients of some studies also rated this category at one of the top two ranks in importance (Timmins & Kaliszer, 2003; Turton, 1998).

Dietary information was the category of information that patients placed third priority of importance. Whereas in the original study (Gerard & Peterson, 1984), patients placed least importance on it. This difference may be because nowadays the society places more emphasis on diet management. As the effects of globalization, there is an increased consumption of unhealthy diet specifically the energy-dense diet with unhealthy fat, oil, sodium, and sugars. This may result in increasing cardiovascular disease trends (Hu, 2008). Patients are subjected to advertisements about heart disease and its causes including unhealthy diet pattern. So that patients of this study may manage their post discharge life through the knowledge of heart healthy diet.

Another reason for giving priority on diet may be because they have some background knowledge about the effects of diet on MI. Chan (1990) reported that the background knowledge may increase interest in the topics. There are some sources of getting background information about diet. They may get information from media, their relatives or family member with same disease or during their previous admission. In this present study, some MI patients had family history of MI (33.1%), and some had previous admission with same disease (44.6%). They may have previous knowledge on it. Thus, they feel interest in this subject. In most of the previous studies, patients placed this category comparatively in lower place (Czar & Engler, 1997; Karlik & Yarcheski, 1987; Timmins & Kaliszer, 2003; Turton, 1998).

Anatomy and physiology was considered as an important area of concern in previous studies (Czar & Engler, 1997; Jaworski, 2005; Karlik & Yarcheski, 1987). If the patients want to truly understand their disease, they must start with understanding the process of the MI and what damage has been done to the heart muscle (Jaworski, 2005). In this present study, patients ranked this category relatively in lower place than the previous studies. This difference may be due to the educational level of the patients. More than half of the patients of the present study (52.3%) had primary school education. They may not be able to realize the importance of anatomy and physiology.

There are numerous risk factors for developing MI in Bangladesh. Rapid urbanization may increase the risk of tobacco use, obesity, unhealthy dietary intake, and a decline of physical activities or increased the occupational health risk including sedentariness (Goyal & Yusuf, 2006). Regular activity and exercise reduces the risk of cardiovascular disease and the chance of heart attack (Myers, 2003). It is observed that the media provides more emphasis on the risk factor to inform public awareness (Jaworski, 2005). For this regard, the discharge information about risk factors and physical activity are important areas for patients with MI. In reality, in this present study, the patients reported their information needs in these two areas relatively low. This finding is inconsistent with the previous studies (Gerard & Peterson, 1984; Karlik & Yarcheski, 1987; Turton, 1998), where the risk factor was considered as the most important learning need by the patients with MI. It may be a result of less awareness of the benefits of exercise together with unavailability of place for exercise and having low income.

Zahan (2013) recently conducted a secondary source review in order to determine the cardiovascular situation in Bangladesh as well as an ethnographic study to identify the current status of cardiac rehabilitation in Bangladesh. Interestingly, a part of the finding out of Zahan's study showed that 17.4 million adult people have low physical activity level and female are more inactive. In addition, urban populations were reported to have

less activity than rural population. These findings provide support to the present study that generally, Bangladeshi people are already physically inactive.

Patient placed psychological concerns and miscellaneous information in the least importance of information needs similar to those found in Timmins and Kaliszer's study (Timmins & Kaliszer, 2003) and Turton's study (Turton, 1998). This result shows that patients did not take into account the psychological problems as serious as physical problems.

Conclusions

Patients' discharge information needs including all eight categories were at a high level. Therefore, it will provide as essential information for an effective cardiac education plan for patients with MI in order to prevention of further readmission and death.

Recommendation

There are some recommendations for further research and clinical implication. First, the results of this study provide the necessary information about the level of discharge information needs of patients with MI. Therefore, nurses could develop a simple check-list by paying attention on the areas that the patients most likely to know to ensure a minimum amount of information prior to hospital discharge. Second, an experimental research is recommended by providing educational program to find the effective way to educate the patients with MI. Moreover, a longitudinal study is recommended to examine the post discharge information needs of the patients with MI. Furthermore, further research also needed to identify the amount of information actually received by the patients from nurses.

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