

Original article:

Factors related to self-care practice in asthmatic patients at rajshahi in Bangladesh

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Abstract

Background: This descriptive correlation study was aimed to examine factors related to self-care practice in asthmatic patients at Rajshahi in Bangladesh. **Methods:** A total of 126 asthmatic patients who met the inclusion criteria were selected by simple random sampling technique during March to April, 2014. The research instruments consisted of four parts: The Demographic Questionnaire, The Asthmatic Self-Care Practice Questionnaire, The Attitude of Asthmatic Questionnaire, and The Knowledge of Asthmatic Questionnaire. KR-20 for the reliability of Knowledge Questionnaire was yielded at 0.76 and the Cronbach's alpha coefficient of Attitude and Self-Care Practice Questionnaire were 0.74 and 0.75 respectively. Data were analyzed using descriptive statistics and Pearson's correlation coefficient. **Result:** The results of the study illustrated that the total mean score of self-care practice in asthmatic patients was 49.63 (*S.D* = 9.5). The mean total score of attitude was 72.46 (*S.D* = 9.27) and the total mean score of knowledge was 11.80 (*S.D* = 4.42). There was a moderate positive significant correlation between attitude and self-care practice ($r = 0.49, p < 0.01$). Additionally, there was a moderate positive significant correlation between knowledge and self-care practice ($r = 0.30, p < 0.01$). **Conclusion:** The findings suggested that nurses should conduct health education programs to increase knowledge and promote positive attitude about self-care practice in asthmatic patients.

Keywords: Self-Care Practice; Attitude; Knowledge; Asthmatic Patients

Bangladesh Journal of Medical Science Vol. 18 No. 01 January'19. Page : 57-62

DOI: <https://doi.org/10.3329/bjms.v18i1.39549>

Introduction

Asthma is a chronic lung conditioning disease that causes chest tightness, wheezing, coughing, and shortness of breath. Many of those who suffer from asthma; however, people of any age can have asthma¹. Effective self-care practice may relieve the symptoms of asthma and permits the patient to carry on a normal social and professional life, while inadequate self-care practice can lead to a significant social and physical handicap and can result in death due to respiratory failure². An estimated 300 million people currently suffer from asthma worldwide, predicted that the number of asthmatics will increase by approximately 100 million by 2025 yearly, and

estimated 250,000 asthma deaths are reported globally³. In the U.S. approximately 23 million people have asthma⁴. The prevalence of asthma worldwide is increasing in low and middle-income countries with large populations³.

According to Bloom, psychomotor Skill is the physical movement, coordination, and use of motor or neuromuscular activities⁵. Orem stated that self-care is the practice of activities that an individual initiate and perform within time frames, on their own behalf in maintaining life, healthful functioning, continuing personal development, and wellbeing⁶. Good self-care practice is expected to reduce costly health crises and improve health

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outcomes for chronically ill patients with conditions such as asthma⁷. One of the case studies has been shown that there is up to a 66% reduction in hospital admissions, 46% reduction in length of stay and 60% reduction in Emergency Department visits due to self-care practice⁸. Improving self-care practice can help to avoid exacerbating asthma attacks; because avoidance of triggers is a key component of improving, controlling and preventing asthma attacks⁹. An increasing attitude can improve patients' self-care practice and carry out the necessary for successfully resolving their asthma problems⁷.

In Bangladesh, prevalence of asthma is increasing day by day. Bangladesh is a developing country and population is high and also low income. The prevalence of this chronic disease is very high in Bangladesh⁹. In 1999 first population-based studies to determine the magnitude of the asthma problem have been carried out in Bangladesh¹⁰. There are estimated 11.6 million people affected from asthma in Bangladesh¹⁰.

Several studies revealed that self-care practice has very effective and substantial benefits for asthmatic patients¹¹. However, there is very limited information available about asthmatic patients' regarding self-care practice in Bangladesh and this study is the first of its kind. Therefore, it is important to explore the knowledge, attitude, and self-care practice. In addition, it is important to identify the relationships between knowledge, attitude, and self-care practice in asthmatic patients at Rajshahi in Bangladesh. The study result can be useful to improve self-care practice in asthmatic patients.

Objectives of the study

1. To explore the self-care practice in asthmatic patients at Rajshahi in Bangladesh.
2. To examine the relationships between knowledge, attitude, and self-care practice in asthmatic patients at Rajshahi in Bangladesh.

Materials and methods

The descriptive correlational study design was used to explore self-care practice in asthmatic patients and the relationships between knowledge, attitude, and self-care practice in asthmatic patients at Rajshahi in Bangladesh. Target population was asthmatic patients who came to receive treatment and follow up in asthma clinic Out Patient Department (OPD) at Rajshahi Medical College Hospital (RMCH) from March to April in 2014. Total 126 asthmatic patients were selected using by simple random sampling technique.

Sample Preparation

The sample size was calculated by using power analysis. There were three components required to estimate the sample size are: 1) the level of significance (α), 2) the power of statistical test ($1-\beta$), and the population effect size (γ)¹². Polit and Hungler stated that when there are no relevant earlier study findings, the researcher used conventions based on expectations of a small sample size¹³. Therefore, the sample size in this study was estimated the significance at 0.05, a power of 0.80, and the small effect size 0.25, requiring a sample size of 126 asthmatic patients for the study.

The questionnaire of this study was developed by the researcher based on the literature review. The instruments included 4 sections: 1) The Demographic Questionnaire, 2) The Asthmatic Self-Care Practice Questionnaire, 3) The Attitude of Asthmatic Questionnaire, and 4) The Knowledge of Asthmatic Questionnaire. The Asthmatic Self-care Practice Questionnaire was consisted of 20 items a four-point Likert scale ranged from 1 to 4; 4= always perform, 3= frequent perform, 2= sometimes perform, and 1= never perform. The score of Asthmatic Self-Care Practice Questionnaire calculated from summing the total score ranged from 20 to 80. The Attitude of Asthmatic Questionnaire was consisted of 20 items composed of 5 levels of attitude ranged from 1 to 5; 5=strongly agree, 4= agree, 3= neither agree nor disagree (not sure), 2= disagree, and 1= strongly disagree. The total score ranged from 20 to 100. The Knowledge of Asthmatic Questionnaire was composed of 20 items. All questionnaires answered in to "yes"/ "No". For correcting one answer respondent got one (1) score and incorrect answer got zero (0) score. The knowledge of Asthmatic Questionnaire calculated from summing the total score ranged from 0 to 20. The higher score indicated high knowledge and lower score indicated low knowledge.

The content validity index of The Knowledge of Asthmatic Questionnaire was .90, The Attitude of Asthmatic Questionnaire was 0.90, and The Self-Care Practice of Asthmatic Questionnaire was 0.95. The reliability of the instrument was examined through a pilot study with 30 asthmatic patients. This study formula used by KR-20 (Kuder-Richardson 20) for internal consistency reliability of The Knowledge of Asthmatic Questionnaire was yielded at .76 and the Cronbach's alpha coefficient value of 0.74 was yielded for The Attitude of Asthmatic Questionnaire and 0.75 was yielded for The Self-Care Practice questionnaire. After that the back-translation methods

were used by three bilingual translators in this study.

Ethical Clearance: Prior collecting the data, the proposal and research instrument was approved by the Institutional Review Board (IRB) of the Faculty of Nursing, Burapha University, Thailand.

The Director of Rajshahi Medical College Hospital in Bangladesh received the IRB permission from the Faculty of Nursing, Burapha University and consented to allow this research. Data were analyzed using descriptive statistics and Pearson's correlation coefficient.

Results

1. Demographic data of the sample: The mean age was 41.43 years ($SD=14.68$) with minimum and maximum age of 18 and 80 years old. Range of age most of the asthmatic patients was between 30 to 40 years (28.6%). A majority of them were female ($n=82, 65.1\%$). Most of the asthmatic patients were married ($n=99, 78.6\%$). The majority of the respondents had primary level

of education ($n=81, 64.3\%$) and income was between 5000 to 10000 BDT (Bangladeshi Taka and 1 U.S dollar equal/ around 78 BDT) (57.9%). Occupation of the asthmatic patients' majority was housewife ($n=43, 34.1\%$). Most of the participants were severe persistent asthmatic patients ($n=50, 39.7\%$) and they were receiving treatment between 5 to 10 years ($n=51, 40.5\%$) with minimum and maximum receiving treatment age of 1 and 60 years.

2. Self-care practice in asthmatic patients: The study findings revealed that the overall asthmatic patients' self-care practice average score was 49.63 ($SD=9.51$). Among sub scale of self-care practice in asthmatic patients revealed that, using of asthmatic medications, preventing of asthmatic triggers, and controlling of asthmatic symptoms had the mean scores of 15.50 ($SD=4.31$), 17.00 ($SD=4.07$), and 17.11 ($SD=3.58$) respectively and it is shown in Table 1.

Table 1 Mean (M), standard deviation (SD) and range of score of self-care practice in asthmatic patients (n = 126).

Variables	Range		M	SD
	Possible score	Actual score		
Self-care practice	20 - 80	22 -70	49.63	9.51
1. Using of asthmatic medications	6 - 24	7 - 23	15.5	4.4
2. Preventing of asthmatic triggers	7 - 28	8 - 27	17.0	4.1
3. Controlling of asthmatic symptoms	7 - 28	7 - 25	17.1	3.6

3. Knowledge and attitude of asthmatic patients: Table 2 (two) illustrates that overall mean score of asthmatic patients' attitude was 72.5 ($S.D=9.3$), and the total mean scores of asthmatic patients' knowledge is 11.8 ($S.D=4.4$).

Table 2 Mean (M), standard deviation (SD) and range of score of the knowledge and attitude in asthmatic patients (n = 126)

Variables	Range		M	SD
	Possible score	Actual score		
Knowledge	0 - 20	5 - 18	11.8	4.4
Attitude	20 - 100	44 - 92	72.5	9.3

4. Relationships between knowledge, attitude, and self-care practice: The Pearson's correlation coefficient

used to determine the relationships. This study results revealed that attitude and self-care practice had moderately positive significant correlation ($r = .49$, $p < .01$). Additionally, relationship between knowledge and self-care practice had also moderately positive significant correlation ($r = .30$, $p < .01$) among asthmatic patients at Rajshahi, Bangladesh and it is shown in Table 3.

Table 3 Pearson's correlation coefficients between knowledge, attitude, and self-care practice ($n = 126$)

Pearson's Correlation coefficients	
Attitude	0.49**
Knowledge	0.30**

** $p < .01$

Discussion

The study findings are discussed in to two parts: 1) self-care practice of asthmatic patients, and 2) relationships between knowledge, attitude and self-care practice in asthmatic patients.

1. Self-care practice of asthmatic patients

The results indicated that overall average self-care practice was a little bit high in asthmatic patients' at Rajshahi in Bangladesh. Bloom stated that, affective domain (attitude) can help to improve psychomotor skills (self-care practice)⁵. There was a positive link between affective domain and psychomotor skills. Bloom, also revealed that the Psychomotor Domain was established to address skills development relating to the physical dimensions of accomplishing a task⁵. In addition, basic knowledge can increase more sophisticated skills and ability to perform critical understanding⁵. This study results depicted that the average knowledge score was a little bit high ($M = 11.8$, $S.D = 4.4$); however, subscale of using of asthmatic medications score was low. As result, self-care practice was affected in asthmatic patients. This study results are congruent with the theory of Taxonomy of Educational Objectives which was developed by Bloom⁵.

In addition, this study results indicated that self-care practice mean scores almost half of the total score; which is reflected by some demographic characteristics. It was found that 81 (64.3%) participant was primary level of education. They cannot read well and follow the asthma guideline. Moreover, there was no evidence or previous study about self-care practice in Bangladesh. This study finding also revealed that the most of the participants were severe persistent asthmatic patients ($n = 50$, 39.7%); it means that actually self-care

practice was low in asthmatic patients at Rajshahi in Bangladesh. Low level of income is reflected to self-care practice. The majority of the respondents ($n = 73$, 57.9%) had low level of income between 5000 and 10000 Bangladeshi Taka (1 U.S dollar equal/around 78 Bangladeshi Taka). In contrast, most of the participants' age were between 30 and 40 ($n = 36$, 28.6%) years old and young adult ($n = 32$, 25.4%) between 18 and 29 years old. Maximum (51,40.5%) respondents were suffering from asthma for 5-10 years. They had previously learned about some self-care practice. They informed by the doctor and registered nurse from asthma clinic. Their self-care practice had more than others; which can increase self-care practice in asthmatic patients. Consequently, average self-care practice score is slightly high found in this study results. Parvin et al., found that maximum respondents were suffering from asthma for 5-10 years which is congruent with this study finding¹⁴.

Moreover, self-care practice researched in other studies revealed that self-care practice can reduce asthma symptoms, prevent asthma triggers, and increase adherence with medication regimens^{15,16}. In this study results are accordance with other study findings. Another study found that positive attitude toward asthma affected patients, and subsequently helped with better asthma self-care practice¹⁷. This study finding overall average attitude score was high; as a result, overall average self-care practice score was a little bit high. One other study revealed that improving both knowledge and attitudes may encourage better self-care practice among asthmatic patients¹⁸. Another study revealed that due to lack of self-care practice, as a result in poor asthma control, frequent unplanned visits to the emergency room, more hospitalizations, and an unnecessary reduction in quality of life for those who live with asthma¹¹.

To sum up, the study findings illustrated that overall average self-care practice score is slightly high; however, actually self-care practice is not appropriate in asthmatic patients at Rajshahi in Bangladesh.

2. Relationships between knowledge, attitude, and self-care practice

Relationship between knowledge and self-care practice: The findings of this study reported that knowledge is moderately positively and significantly associated with self-care practice ($r = .30$, $p < .01$). This result is in accord with the study hypothesis and answered the research questions. The finding of the study is congruent with the theory of Taxonomy of Educational Objectives which was developed by

Bloom⁵. Knowledge represents the lowest level of learning outcomes in the cognitive domain⁵. Basic knowledge can increase more sophisticated skills or self-care practice and ability to perform critical understanding and there is a positive link between cognitive (knowledge) domain and psychomotor skills (self-care practice)⁵. In this study result congruent with the study conceptual framework; knowledge is associated with self-care practice in asthmatic patients. This study results are in accord with other study results. One study found that there is a small positive correlation between knowledge and self-care practice in asthma ($r = 0.24, p < 0.01$)¹⁹. One other study illustrated that awareness of the patients' knowledge and practice of controlling and preventing the disease is important for planning health education activities¹⁴.

To sum up, the study result indicated that the study independent variable "knowledge" is associated with dependent variable "self-care practice" in asthmatic patients at Rajshahi in Bangladesh. There is a positive relationship between knowledge, and self-care practice in asthmatic patients.

Relationship between attitude and self-care practice: The findings of this study reported that attitude is moderately positively and significantly associated with self-care practice ($r = 0.49, p < 0.01$). This result is congruent with the study hypothesis and answered the research questions. The finding of the study is also congruent with the theory of Taxonomy of Educational Objectives which was developed by Bloom as described above⁵. Attitude is an internal or covert feeling and emotion or selective nature of intended behavior which represents the affective domain⁵. Affective domain (attitude) can help to improve psychomotor skills (self-care practice) and there is a positive link between affective domain (attitude) and psychomotor skills (self-care practice)⁵. This study result is congruent with the study conceptual framework: attitude is associated with self-care practice in asthmatic patients.

In addition, the study findings were also congruent with previous study results. One study found that,

there was a significant correlation between attitude and self-care practice²⁰⁻²¹. According to Bloom, effective education can bring change in human behavior especially regarding positive attitudes which can increase self-care practice⁵. Pearson et al, stated that an increasing attitude can improve patients' self-care practice and carry out the behaviors necessary for successfully resolving their asthma problems⁷. In this regard, nurses should conduct health educational programs and involve the asthmatic patients and increase attitude about self-care practice.

To sum up, the study result indicated that the study independent variable "attitude" is associated with dependent variable "self-care practice" in asthmatic patients at Rajshahi in Bangladesh. There is a positive relationship between attitude and self-care practice in asthmatic patients.

Conclusion

In conclusion, the study findings revealed that overall average self-care practice score was slightly high in asthmatic patients at Rajshahi in Bangladesh. The current findings emphasize the importance of improving self-care practice in asthmatic patients at Rajshahi in Bangladesh. It is obviously stated that knowledge and attitude are important factors that can improve self-care practice in asthmatic patients. Improving knowledge can enhance positive attitude that can help to improve self-care practice.

Acknowledgements

We would like to appreciate to those who are participating in this study.

Conflict of interest: None declared

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