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Nurses' Knowledge on Management of Bronchial Asthma Disease at Rajshahi Medical College Hospital

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Abstract: ***Background:*** Asthma is a chronic respiratory disease characterized by airway inflammation, leading to wheezing, coughing, chest tightness, and shortness of breath. Effective asthma management requires healthcare professionals to have adequate knowledge about the disease and its treatment options. ***Objective:*** This study aimed to assess the knowledge of nurses at Rajshahi Medical College Hospital regarding the management of bronchial asthma. ***Method:*** A cross-sectional study was conducted, and fifty nurses were selected as respondents from July 2017 to January 2018. A structured questionnaire was used to collect data on demographic characteristics, socio-economic status, and knowledge about bronchial asthma management. The questionnaire was divided into demographic information, nurses' knowledge about asthma management, and patient knowledge about asthma. ***Result:*** The study found that 96% of nurses were knowledgeable about incident-related bronchial asthma, while 4% were not. All nurses provided health education and counseling to patients, and 92% demonstrated the correct use of inhalers. Additionally, 96% of nurses encouraged regular medication use, while 4% did not. 94% of nurses advised patients to avoid environmental dust, while 6% did not. 92% of nurses assisted patients with investigations, while 8% did not. Family history was recognized as a risk factor for bronchial asthma by 94% of nurses, while 6% did not. ***Conclusion:*** The study concludes that while nurses at Rajshahi Medical College Hospital demonstrate good knowledge and practices regarding asthma management, there is still room for improvement. Continued education and training programs could enhance nurses' knowledge and skills in managing bronchial asthma effectively.

Keywords: Asthma, Management, Nurses, Knowledge.

Research Paper

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INTRODUCTION

Asthma is a chronic respiratory condition characterized by airway inflammation, leading to wheezing, breathlessness, chest tightness, and coughing [1]. It affects people of all ages and can significantly impact their quality of life. According to the Global Initiative for Asthma (GINA), asthma affects an estimated 300 million people worldwide, with projections suggesting a further increase in the number of cases [2]. In Indonesia, asthma is a major health concern, ranking seventh among diseases that lead to death [3]. The impact of asthma extends beyond its physical symptoms. It can affect mental health, social life, and economic well-being. Individuals with asthma often face challenges in managing their condition, which can result in frequent hospitalizations, missed days of work or school, and decreased productivity. Additionally, asthma can be a financial burden due to the costs associated with medications, healthcare visits, and lost income.

One of the environmental factors that can trigger asthma symptoms is air pollution. Pollutants such as particulate matter, nitrogen dioxide, and ozone can irritate the airways, leading to inflammation and exacerbation of asthma symptoms [4]. Long-term exposure to air pollution has been linked to an increased risk of developing asthma and worsening asthma control [5]. In Indonesia, the prevalence of asthma is higher in urban areas, where air pollution levels tend to be elevated [6]. Asthma management involves a combination of pharmacological and non-pharmacological interventions

[7]. Medications such as bronchodilators and corticosteroids are commonly used to control symptoms and reduce inflammation in the airways [8]. However, patient education and self-management are crucial in improving asthma outcomes [9].

Patient education programs aim to empower individuals with asthma to take control of their condition and improve their quality of life. These programs provide information on asthma triggers, medication use, and self-monitoring techniques. They also teach patients how to recognize and respond to worsening symptoms, such as using a peak flow meter to monitor lung function [10]. Several studies have demonstrated the positive impact of patient education on asthma management. For example, a study found that an education program reduced the number of emergency department visits and days off work among asthma patients [11]. Similarly, patients who participated in an education program reported improvements in lung function and self-control. These findings suggest that patient education can help reduce the burden of asthma on individuals and healthcare systems. Self-efficacy, or the belief in one's ability to manage asthma effectively, plays a crucial role in asthma self-management. Individuals with high self-efficacy are more likely to adhere to their treatment plans, avoid asthma triggers, and seek help when needed. Several studies have shown that educational programs can increase self-efficacy in asthma patients, leading to better asthma control and quality of life [12].

OBJECTIVE

General Objective

- To assess nurses' knowledge of bronchial asthma management at Rajshahi Medical College Hospital.

Specific Objectives

- Determine nurses' demographic characteristics.
- Evaluate nurses' knowledge of incident-related bronchial asthma.
- Assess nurses' practices in health education and counseling for asthma patients.
- Evaluate nurses' ability to demonstrate inhaler use.
- Investigate nurses' advice on regular medication and environmental triggers.
- Explore nurses' assistance in patient investigations.
- Determine nurses' recognition of family history as an asthma risk factor.
- Identify areas for improving nurses' asthma management knowledge and practices.

MATERIAL AND METHODS

Study Design

The study employed a cross-sectional descriptive design to assess nurses' knowledge of bronchial asthma management at Rajshahi Medical College Hospital. This design allowed for data collection at a single point in time, providing a snapshot of nurses' knowledge levels. The study explored nurses' understanding of bronchial asthma, their practices in managing the disease, and any factors influencing their knowledge. Data was collected using questionnaires and analyzed using descriptive statistics.

Inclusion Criteria

- Senior staff nurses working at Rajshahi Medical College Hospital.
- Willingness to participate in the study.
- Ability to read and understand the questionnaire in Bengali or English.
- Nurses who have been working at the hospital for at least one year.

Exclusion Criteria

- Nurses who are not willing to participate in the study.
- Nurses who have less than one year of experience at the hospital.
- Nurses who are unable to read or understand the questionnaire in Bengali or English.
- Nurses who are on leave or absent during the data collection period.

Data Collection

Data collection for this study involved obtaining written permission from the hospital authority and explaining the study objectives to nursing supervisors and the nursing superintendent. Questionnaires were used to collect data on nurses' knowledge of bronchial asthma management. The questionnaires were distributed to eligible nurses, and their responses were recorded. The collected data were then tabulated and analyzed using descriptive statistics to summarize the findings.

Data Analysis

The data collected from the questionnaires were entered into a database using SPSS version 26 for analysis. Descriptive statistics, including frequencies and percentages, were used to analyze the nurses' demographic information and their knowledge of bronchial asthma management. The results were tabulated and presented using various tables to facilitate understanding and interpretation. This analysis helped to identify patterns and trends in nurses' knowledge and practices regarding bronchial asthma.

Ethical Considerations

Ethical approval was carefully observed throughout the study. The study proposal was approved by the syndicate/thesis committee of Islamic University, Kushtia, and Rajshahi Medical College Hospital ensuring compliance with ethical standards. Written permission was obtained from the hospital authority

before data collection. The study objectives were explained to the participants, and their informed consent was obtained. Confidentiality and anonymity of the participants were maintained throughout the study, and no personal identifiers were used in the data analysis or reporting.

RESULT

The study results are presented in this section, focusing on the knowledge of nurses at Rajshahi Medical College Hospital regarding managing bronchial asthma.

The data represents demographic characteristics of a group. In terms of age distribution, the majority (70%) fall within the 31–50-year range, indicating a mature population. Gender distribution is skewed, with females comprising 74% of the group. Marital status shows a predominantly married population (84%). Religion is predominantly Muslim (90%), indicating a specific cultural context. Education levels vary, with the majority having completed S.S.C. (82%). This data provides insights into the group's composition, suggesting a mature, predominantly female, married, Muslim population with a significant proportion having completed S.S.C. Understanding these demographics can inform targeted approaches in various contexts such as healthcare, education, and social services.

The data indicates a high level of agreement among respondents regarding the disorder being an inflammatory condition (86% agreement) and involving airflow obstruction (90% agreement). However, there is uncertainty or disagreement regarding whether it is classified as a syndrome, with a split of 50% on both sides. Additionally, there is a clear consensus that the disorder is not an infectious disease, as only 14% agreed with this statement. The response to alimentary tract infection also shows a lack of consensus, with 20% agreement and 80% disagreement. This data highlights areas of agreement and disagreement among respondents, suggesting a need for further clarification or discussion.

The data suggests a high level of engagement by healthcare providers in educating and supporting patients with bronchial asthma. Almost all providers (96-100%) have informed patients of asthma-related incidents, provided health education counseling, demonstrated inhaler use, encouraged regular medicine intake, and taught patients about avoiding dust. Additionally, a majority (94-96%) are aware of the role of family history in asthma. These findings indicate a proactive approach by healthcare providers in managing asthma, focusing on education, demonstration, and support to improve patient outcomes and quality of life.

Table 1: Demographic Characteristics of the Respondents

Variable	Number	Percentage (%)
Age		
21-30 years	4	8
31-40 years	15	30
41-50 years	20	40
Above 50 years	11	22
Gender		
Female	37	74
Male	13	26
Marital Status		
Single	1	2
Married	42	84
Widow	7	14
Religion		
Muslim	45	90
Hindu	5	10
Christian	0	0
Buddhist	0	0
Academic Qualification		
S.S.C.	41	82
H.S.C	6	12
B.Sc./B. A.	2	4
Masters	1	2

Table 2: Distribution of the respondent by their knowledge of Bronchial asthma

Parameter	Answer			
	Yes	%	No	%
It is an inflammatory disorder	43	86	7	14
It is a syndrome	25	50	25	50
It is an infectious disease	7	14	43	86
Airflow obstruction.	45	90	5	10
Alimentary tract infection.	10	20	40	80

Table 3: Nurses knowledge on the management of Bronchial Asthma

Question	Answer			
	Yes		No	
	Yes	%	No	%
Have you informed the patient of any incident related to bronchial asthma complications to the patient?	48	96	2	4
Do you provide health education counseling to the patient & their relatives?	50	100	-	-
Do you demonstrate to the patient how to use an inhaler?	46	92	4	8
Do you encourage the patient to take regular medicine?	48	96	2	4
Do you teach the patient about avoiding dust in the environment?	47	94	3	6
Do you know if family history is responsible for asthma?	47	94	3	6

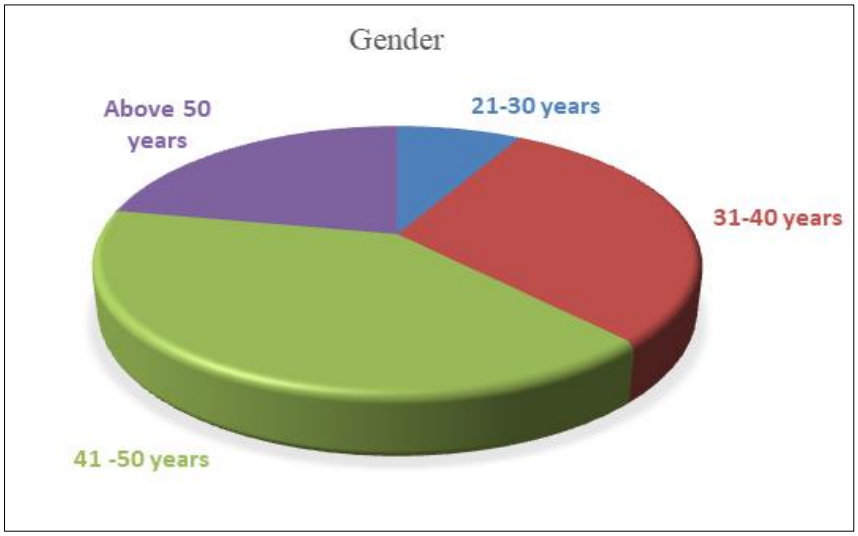

Figure 1: Age distribution of the respondents

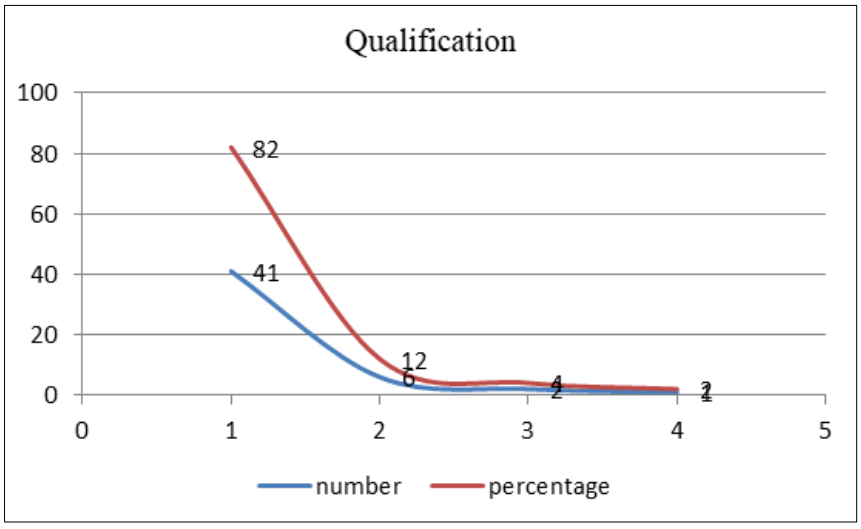

Figure 2: Academic qualification of the respondent

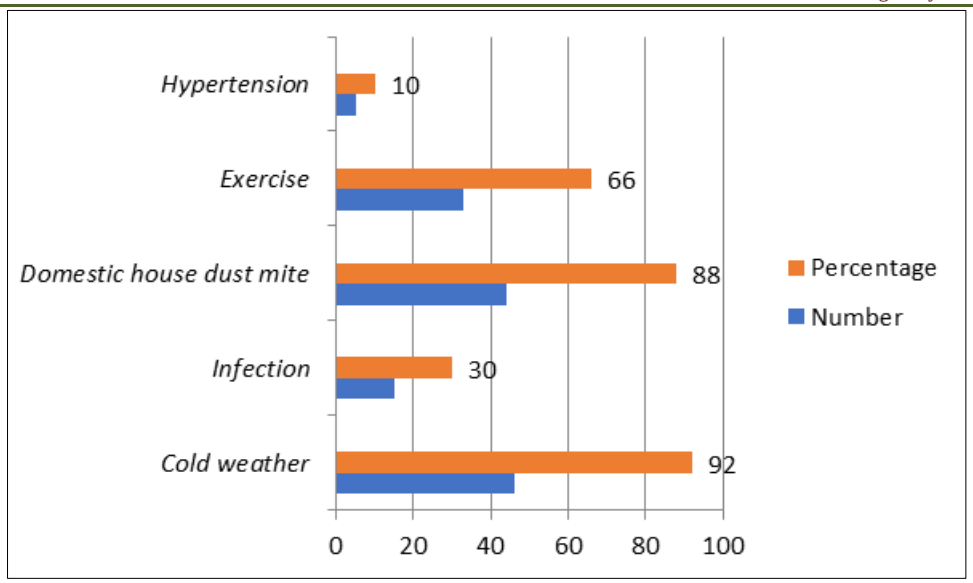

Figure 3: Distribution of the respondent by the knowledge about causes of bronchial asthma

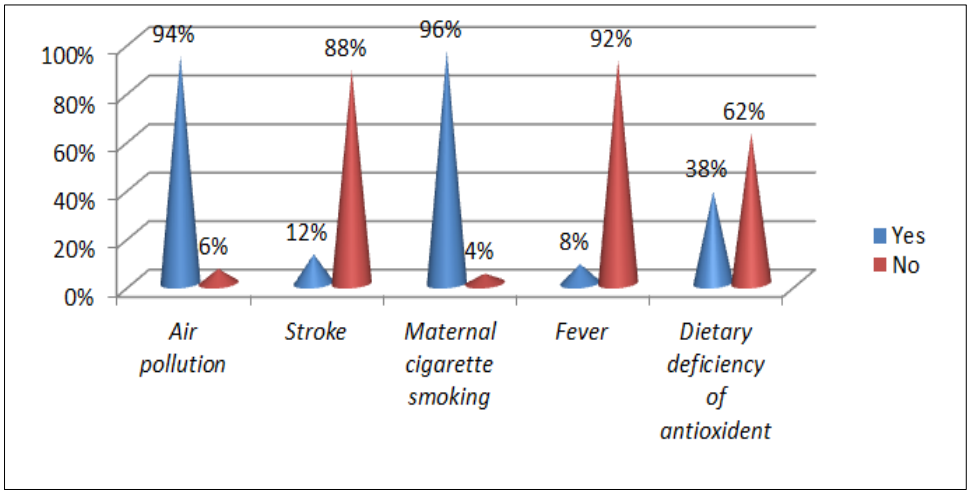

Figure 4: Distribution of the respondent by knowledge about the Predisposing factor of Bronchial Asthma

DISCUSSION

This study aimed to assess nurses' knowledge and management practices regarding bronchial asthma at Rajshahi Medical College Hospital [13]. The study revealed several important findings regarding the nurses' demographic characteristics and knowledge levels. The majority of the nurses were in the age group of 41-50 years, female, married, Muslim, and had completed S.S.C. This demographic profile reflects the typical composition of the nursing staff at the hospital. Demographic characteristics such as age, gender, and education level can influence an individual's knowledge and behavior. In this study, the nurses' demographic characteristics were consistent with previous research on nursing demographics. The study found that most nurses understood bronchial asthma as an inflammatory disorder and were aware of the importance of health education and counseling for patients. However, there were some gaps in knowledge, such as confusion regarding whether asthma is a syndrome or an infectious disease. Additionally, while most nurses were knowledgeable about the management of bronchial asthma, there were some misconceptions regarding complications and predisposing factors [14]. The findings of this study are consistent with previous research that has highlighted the importance of education and training for nurses in managing bronchial asthma effectively. Other studies have also identified gaps in knowledge among nurses regarding asthma management, suggesting a need for ongoing education and training programs.

The findings of this study are consistent with previous research that has highlighted the importance of education and training for nurses in managing bronchial asthma effectively. Other studies have also identified gaps in knowledge among nurses regarding asthma management, suggesting a need for ongoing education and training programs. Comparing our study findings with those of other studies can provide valuable insights into the knowledge and practices of nurses regarding

bronchial asthma. For example, a study found that nurses in a similar setting had similar knowledge regarding bronchial asthma as an inflammatory disorder and the importance of health education and counseling for patients [15]. However, our study found some differences in knowledge regarding the nature of asthma, with a higher percentage of nurses in our study considering it a syndrome rather than an inflammatory disorder [16]. This difference could be attributed to differences in sample size or demographic characteristics of the nurses in each study. Additionally, while both studies found that most nurses were knowledgeable about managing bronchial asthma, there were some differences in specific management practices[17-20]. For example, found that a lower percentage of nurses provided health education and counseling compared to our study. These differences could be due to variations in the healthcare system, training programs, or patient populations between the two settings. Further research is needed to explore these differences and identify strategies to improve asthma management practices among nurses.

The findings of this study have several implications for nursing practice. It is essential to provide nurses with comprehensive education and training on bronchial asthma management to ensure they have the knowledge and skills necessary to provide high-quality care to patients. Additionally, further research is needed to explore the impact of training on nurses' knowledge, attitudes, and practices regarding asthma management [21]. The findings of this study are consistent with the literature that emphasizes the need for ongoing education and training for nurses to improve their knowledge and skills in managing bronchial asthma [22]. Nurses play a crucial role in the care of patients with asthma, and they must have the knowledge and skills necessary to provide optimal care. One limitation of this study is the small sample size, which may limit the generalizability of the findings. Additionally, the study was conducted at a single hospital, which may limit its applicability to other settings. Future research should aim to include larger and more diverse samples to enhance the generalizability of the findings.

CONCLUSION

Asthma is a chronic respiratory disease characterized by difficulty breathing and is often triggered by allergies. During asthma attacks, patients experience breathlessness and may require emergency treatment. Effective asthma management involves preventing triggers, proper medication use, and breathing techniques. Educational programs are crucial in improving patients' self-efficacy and empowering them to manage their condition confidently. These programs focus on various factors such as locus of control, goal orientation, and social support to enhance patients' skills in asthma control. Asthma management aims to achieve and maintain control over the condition through a collaborative approach between patients, caregivers, and healthcare providers. Regular assessment of asthma control helps in adjusting treatment regimens to maintain optimal control and improve the quality of life for asthma patients.

Recommendations

- Implement comprehensive educational programs for nurses and patients to improve asthma management.
- Provide regular training for healthcare providers on the latest asthma guidelines and best practices.
- Enhance patient counseling services to include detailed medication usage and trigger identification instructions.

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Authors Contributions

Md. Mominul Islam, Lupin Akter, was the conceiving the study design and drafting the manuscript. Suborna, Sima Khatun, and Tanzina Islam, were involved in data collection, analysis, and interpretation. Dr. Sohel Rana, provided expertise in study design and statistical analysis. Their combined efforts ensured the thoroughness and accuracy of the research findings on nurses' knowledge of bronchial asthma management.

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REFERENCES

1. Reza, H. M., & Saha, A. K. Nurses' knowledge regarding management of chronic bronchial asthma in Rajshahi Medical College Hospital.
2. Alotaibi, G. A. (2015). Asthma control and self-management: The role of asthma education. *Saudi Journal for Health Sciences*, *4*(1), 16-22.
3. Agustina, R., Dartanto, T., Sitompul, R., Susiloretni, K. A., Achadi, E. L., Taher, A., ... & Khusun, H. (2019). Universal health coverage in Indonesia: concept, progress, and challenges. *The Lancet*, *393*(10166), 75-102.
4. Sarnat, J. A., & Holguin, F. (2007). Asthma and air quality. *Current opinion in pulmonary medicine*, *13*(1), 63-66.
5. Elbayoumi, M., Ramli, N. A., Yousif, N. F. F. M., & Ismail, M. R. Indoor Air Pollutants Influenced by

Haze and Their Health Impacts on Malaysian students.

6. Damanik, S. R. H. (2009). *The Effect of asthma educational program on self-efficacy in Skill management of Asthma in Pekanbaru, Indonesia* (Doctoral dissertation, Prince of Songkla University).
7. Islam, T. (2021). Effect of Night Shift on Personal Health and Other Factors of Nurses at Rajshahi Medical Collage Hospital, Rajshahi, Bangladesh. *Sch J App Med Sci*, *3*, 393-397.
8. Abdalkader, R. H., & Hayajneh, F. A. (2008). Effect of night shift on nurses working in intensive care units at Jordan University Hospital. *European Journal of Scientific Research*, *23*(1), 70-86.
9. Begum, M. R., Banu, R. A., Parvin, M. T., Mst, S. K., & Mittra, C. R. (2024). Night Shift Duty of Nurses and its Effects on Family and Social Lives. *International Journal of Medical Science and Clinical Research Studies*, *4*(02), 250-254.
10. Woo, S. H., & Kim, K. H. (2008). Knowledge related to disease, awareness and practice of inhalers use in asthmatic patients. *Journal of Korean Academy of Fundamentals of Nursing*, *15*(4), 418-427.
11. Joseph, J. (2010). *A study to assess the effectiveness of structured video teaching programme on knowledge and practice regarding management and prevention of complications of bronchial asthma among mothers of under five asthmatic children in Masonic Hospital, Coimbatore* (Doctoral dissertation, Cherraan's College of Nursing, Coimbatore).
12. Lamey, T. W., & Davidson-Shivers, G. V. Aligning Change Theory with a Process Model to Assist Self-Identification of Patients with Asthma. *Thannual*, 117.
13. Bandura, A. (1997). Self-efficacy the exercise of control. New York: H. *Freeman & Co. Student Success*, *333*, 48461.
14. Sun, D., Sun, P., & Wang, Z. (2023). Assessment and therapeutic management of acute asthma: The approaches of nursing staff in patient care. *Advances in Clinical and Experimental Medicine*.
15. Sangngam, J., Prasopkittikun, T., Nookong, A., Pacharn, P., & Chamchan, C. (2023). Causal relationships among self-management behaviors, symptom control, health-related quality of life and the influencing factors among Thai adolescents with asthma. *International Journal of Nursing Sciences*, *10*(3), 309-317.
16. Haque, M. A., Begum, M. M. M., Sayem, M. A., & Hasan, H. (2021). Management of Surgical Site Infection. *East African Scholars J Med Surg*, *3*(4), 70-76.
17. Diba, S. N., Hanif, M. A., Nasrullah, S. S., & Alam, M. S. (2024). Evaluation and Surgical Outcomes of Primary Closure for Breast Abscess-3 Year Experience in Rangpur Zone. *SAS J Surg*, *2*, 248-252.
18. Saravanakumar, R., Maniraj, S. P., Barshan, A. D., Das, S., Hasan, H., & Alazzam, M. B. (2023, November). Clustering big data for novel health care system. In *AIP Conference Proceedings* (Vol. 2587, No. 1). AIP Publishing.
19. Rawat, A., Hivre, M., Sharma, A., Zaidi, S. A. A., Abedin, M. Z., & Hasan, M. H. (2023). Smoking And Coronary Heart Disease Impact. *Journal of Pharmaceutical Negative Results*, 1737-1742.
20. Baset, A. (2021). Outcomes of Acute ST-Elevation Cardiac Disease in a Tertiary Level Hospital in Bangladesh Young Adults' Risk Factors and Consequences. *SAS J Med*, *9*, 465-474.
21. Hasan, R. (2024). Rukaiya Khatun Moury, Nazimul Haque. Coordination between Visualization and Execution of Movements. *Sch J Eng Tech*, *2*, 101-108.
22. Sangnimitchaikul, W., Srisatidnarakul, B., & Ladores, S. (2020). Perspectives on managing asthma and facilitators in asthma self-management among Thai school-age children: a qualitative study. *Journal of Health Research*, *35*(3), 214-225.