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Research Article

Medication Management by Clinical Nurses at Tertiary Level Hospital in Bangladesh

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Abstract: The facilitation of safe and effective use of prescription and over-the-counter medicinal products is called medication management. It is a comprehensive intervention where encompasses the nurses knowledge and performed activity to assist the patients in achieving the greatest benefit and best outcomes involving medications as well as patient safety culture. This study's aimed to assess how nurses practice medication management in Bangladesh. A descriptive study was conducted with 80 nurses at Mugda medical college hospital, Dhaka, Bangladesh. The data was collected by self-developed instrument which was consisted of two parts including social-demographic characteristics and medication management practice scale (MMPS) questionnaire for nurses. Data were analyzed using t-test; analysis of variance (ANOVA) and correlation statistics by SPSS version 23. The overall medication management practice among nurses in the workplace was very high (M=4.31, SD=0.69). The top practice was found 'put right level in right drug during storage' (M=4.79, SD=0 .57). The lowest practice were found 'do not double check during medication administration' (M=3.51 SD=1.61). Nurse's age had a significant positive correlation with medication management practice. (r=.80, p=.002). Also working experience had a significant relationship with medication administration practice (r=.69, p= .01) The outcome of the study will contribute to identify the specific contents regarding the practice of medication management among Bangladeshi nurses. The finding of this study will help nurses to prevent from medication related error and how to overcome it that establish patient safety.

Keywords: Medication management, Medication administration practice, Medication storage Practice, Nurses, Patient safety.

INTRODUCTION:

Medication management is the most important and core function of a clinical nurse at hospital for bedside patient caring. From select medication to prepare, administer, document and monitor all the symptom after administration all are included called medication management and that done by a nurse for patients (Raval, Kapadia, Gadhave, & Patel, 2018). The nurse should have the proper knowledge regarding the practices of prescribing, dispensing, storing, supplying and administering scheduled and the pharmacology of medicinal products (Pegram & Blomfield, 2014). Now a days its main challenge for nurses to keep safe the patient from error in medication management as well as established patient safety culture (You, Choe, & Kim, 2015). Unfortunately, due to lack of proper reporting system or minor side effect, it may overlook by the care providers.

There is a substantial harm and safety issue for the patients are related to medication management. But the primary impact of error in medication management are increase hospitalized duration, cost of treatment and in some cases severe damage, side effect even death (Gholipour *et al.,* 2016), although the severity of impact is depending on the types of medications or routes of administered. According to van Doormaal *et al.,* (2009) and Kvitingen, (2017) negative impact of medication management causes, medication errors which can lead to preventable adverse drug events and the severity of the consequence that reached the patient to the death. Therefore, it is important to know what type of error are

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usually occur during our medication administration practice. Although, very little is known about how patients understand medication administration related problems or how they make attributions of an adverse effect, but we should know about all barriers and effect of error in medication management.

The errors can occur at any stage of the medication management, such as ordering, dispensing, administering, and monitoring. But it is more likely occurs at the prescribing (56%), administering (34%) stages or choosing an inappropriate method of drug administration in the hospital settings (Keers, Williams, Cooke, & Ashcroft, 2013). For any reasons either due to individual or systematic errors, nurses have a greater role in the prevention of medication errors. (Cheragi, Manocheri, Nejad, & Ehsany, 2013). Conversely, Cloete (2015) stated that most often nurses are not much aware about the types of medication management. For example- the most common wrong practice of nurses are giving medication in incorrect time and give medicine after omission of a previously ordered. Another wrong practice are associated with wrong patient or wrong way, giving multiple drugs that interact negatively and incorrect recordkeeping (Fathi *et al.,* 2017).

In addition, inexperienced nurses, new procedures, extremes of age, and complex or urgent care, poor communication, improper documentation, illegible handwriting, inadequate nurse-to-patient ratios, long sift or overtime (Parry, Barryball, & While, 2015) working climate (Sahay Hutchinson, & East, 2015) and similarly named medications are also known to contribute to the mismanagement of medication (Weingart, Wilson, Gibberd, & Harrison, 2000). Sometimes, patient actions may also contribute significantly to medication errors. This is most common and obvious practice of the nurses in majority hospitals that most of the drugs often given to patients on hand and there is a lack of supervision about either a patient taken the given drugs or not. In addition, most patients have parched the prescribed drugs by their self and these are with patients. So, both the time as well as the dose of drugs patients' intake by their own that also be an important cause of medical malpractice. May be it is an uncommon practice in Bangladesh from many others countries.

Error in medication management as most common forms which leading cause of patient's morbidity and mortality (Carandang, Cao, Jose, Almonte, & Tinio, 2015). A systematic review on Global Burden Diseases (GDB) Mortality and Causes of Death (2014) reported that, globally, around 142,000 people died in 2013 due to malpractice of medication management (Cristofer, 2014). Another UK study reported that an estimated 850,000 medical errors occur each year in the UK and, costing over £2 billion Katharine, James, Lambert, Karen, & Ian, 2010). A

similar study in USA, found that medical error is the third leading cause of death, after heart disease and cancer. Around 250,000 deaths per due to medical error, which were 9.5% of all deaths annually in the US. This study also stated that about 400,000 drug-related injuries were preventable (Frelick, 2016).

The roles of clinical nurses in medication management are complex and multifaceted. These roles include administering medication safely and efficiently, assessing and monitoring for desirable and unwanted effects, discharge planning, and providing patient education. For nurses carry out these roles effectively, they must possess comprehensive knowledge that involves an understanding of the scientific principles underpinning medications as well as the ability to contextualize medication management to the complex and changing needs of patients (Al-Youssif *et al.,* 2013). One study was conducted by Eshani *et al.,* (2013), reported a ME error rate of about 15% and nurses were responsible for 56% of errors. The study also showed that the most common types of error were the omission of medicine and inappropriate dosage, and nurses were responsible of 16.7% for this error. All nursing activity should be documented by electronic system that reduce the error (Debono *et al.,* 2017).

Edward and Axe (2015) stated nurses administering drugs at the bedside should continue to use and incorporate the five 'R's (Right patient, Right drug, Right dose, Right time & Right route) approach to safe drug administration. However, nurses and other health professionals need to consider their roles in medication management more broadly, and should consider a ten 'R's method. The additional five R s was 'The right to refuse (patient and nurse, including autonomy), 'Right knowledge and understand', 'Right questions' (including reason), 'Right response' (including documentation), 'Right advice.

The error should be reduce to establish patient safety by identifying error and report about this. To reduce error there should be involve simulation and e-learning in nursing education. (Hayes, Power, & Davidson, 2015) because Electronic Medication Management Systems (EMMS) have been shown to reduce medication errors (Debono *et al.,* 2018). Patient education is also a wide factor to reduce error because most of time patient were taking medication by self. So good communication with patient is needed to establish patient safety (Aziz *et al.,* 2017). National patient safety agency in United Kingdom had made the following recommendations to reduce medication errors (Department of Health, 2004).

- ➢ All serious prescribing errors and near misses should be reported.
- ➢ Prescriptions should always carry patient directions.
- ➢ Particular attention to checking the accuracy of complex dose calculations.

➤ The patient's medical record should checked before a new prescription is written
➤ The treatment plan, response to drug & giving medication should be clearly documented in the patient's clinical record
➤ Prescribers and followers should be trained.

There are several factor should be work together to reduce medication error and establish as well as patient safety like individual factor, organizational factor. The individual factor of healthcare worker should be conscious regarding patient safety and develop themselves by several way like training, experience, cancelling etc. The organization should also provide all equipment facility, good environment for work, prevent shortage of staff give valuable salary and provide recent evidence based training. They should also attached with research activity to know about latest technology.

In Bangladesh, although the prevalence's or consequences of error of medication management are mostly unknown due to lack of study in this area, but the possibility of errors in medication management cannot be ignorable. The possible sources as highlighted in the global literature is mostly exists in the health care system of Bangladesh. In spite of lack of study, it is very reality that nurses in Bangladesh are working with very unfavorable working environment systems (Latif, Thiangchanya, & Nasae, 2010). It is a common picture in most of the public hospitals that patient related documentations including proper identification of patients in the words, individual drug cards, medication giving record system, storing process of drugs in the unit as well as in the drug stores, prescription of treatment by a physician as trade names and so on are mostly absent. Until now nurses maintain a very casual process of drug administration to the patients due to high workloads in clinical settings and maintain all records manually without following any standard systems. Therefore, the researcher would like to conduct the present study to assess the medication management practice among clinical nurses and explore the prevalence of medication errors. It is expected that this study will help the nurse manager as well as administrator to identify the gap in medication management practice and also explore the causes of it.

Objective:
To describe the medication management practice among nurses in the public hospital of Bangladesh.

Specific Objectives
• To explain the socio demographic characteristic of the nurses.
• To identify the prevalence of medication error.
• To assess the medication management practice among nurses.
• To explore relationship between socio demographic characteristics, prevalence of medication error and

medication management practice.

METHODS:
1. Study Design
A descriptive exploratory study design was used to explore nurses practice on medication management from July, 2018 to June 2019.

2. Study Participants

This study was conducted at 500 Bedded Mugda Medical College Hospital, Dhaka in Bangladesh that is only the tertiary level public hospital in Northern region of Dhaka city. The total number of nurses in this hospital was about 550. So, the possible sample size as well require for the study was sufficient for data collection. All senior staff nurses of Mugda Medical College Hospital were population of the study. The sample size was estimated using G power analysis with set significance (α) of 0.05, an expected power of 0.80 (1-β) and medium effect size of 0.30 (y). This calculation revealed 65 sample size and by adding 20% extra subjects, total 80 participants were included in the study. The sample in this study was nurses of Mugda medical college hospital who fill the following inclusion criteria:

➤ Nurses who had diploma in nursing and midwifery or others equivalent educational qualification.
➤ 2 years' service experience in nursing at this hospital.
➤ Nurses who were willingly participate in this study.

A simple random sampling technique was used in this study to collect data from Mugda medical college hospital. Researcher distributes the questionnaire to 85 nurses and the participant was filling up the questionnaire by self-reported. At last researcher got 80 questionnaire return from the participants.

3. INSTRUMENTS
The instruments for data collection consist of three parts: Part I: The Socio demographic Data Questionnaire (SDQ) was developed by the researchers to explore nurses' socio-demographic characteristics: age, gender, marital status, educational level, and work place. Part II: Prevalence of medication error questionnaire (PMEQ) 6 items to identify the prevalence of medication error. Part III: Medication management practice scale (MMPS) included 2 dimensions (administration and storage & documentation of medication) 28 items with 5 point Likert scale response from 1=Never practice, 2=Very rarely practice, 3= occasionally practice, 4 =Almost always practice and 5=Always practice.

All data collection questionnaires were developed by researcher based on existing literature review. Three content experts were examined the content validity of medication management practice scale (MMPS) Questionnaire. These three experts were- One Faculty of Shaheed Suhrawardy Nursing College, one Faculty of Adult and Elderly Health Nursing at NIANER and one Faculty of Mental Health and Psychiatric Nursing at NIANER.

At first researcher prepared 47 items for this scale, then according to the advice of expert deleted 19 items and modified 9 items. Before modification the CVI score of the questionnaire was .84 and after modification it was .94. Reliability of this instrument was tested among 20 nurses who were not included in the actual sample of the study before conducting actual research for checking the internal consistency of the instrument. The result of this study was .96 where acceptable internal consistency reliability using at least .70 according to Polit and Beck, (2012). The original instrument was in English version and before distributing to study sample it was translated into Bengali and again translated into English for compare the consistency of questionnaire. Data were collected by Bengali questionnaire.

4. Data Collection
Permission was obtained from the Institutional Review Board (IRB), National Institute of Advanced Nursing Education and Research (memo no – IRB.Exp.NIA-S-2018-48 dated 15/11/2018) and Bangabandhu Sheikh Mujib Medical University (BSMMU). A formal permission for data collection also obtained from the hospital director of study setting (500 bedded/MGH/Ad/2019/ dated 12/01/2019). After that researcher went to the selected department with nursing supervisors and introduced with ward in-charge and other nurses of this ward. The researcher was explained the aim of the study with nurses. Verbal and written consent were taken from the nurses to ensure their voluntary participation. Then researcher, distributed 85 Bangla version questionnaire form to the subjects. Out of 85 distributed questionnaires, 80 were returned and used for data analysis. The duration of data collection was from January 2019 to February 2019.

5. Data Analysis
Collected data were analyzed by using specially designed computerized "Statistical Package" (SPSS). Both descriptive and inferential statistics were used for data analysis.

The descriptive statistics such as frequencies, percentages, mean, and standard deviation were used to organize and present socio-demographic characteristics. The inferential statistics, such as t-test, Correlation and ANOVA were used to examine the relationship between socio-demographic characteristic of the nurses, prevalence of medication error and medication management practice.

Results:
This chapter presents the study findings of the demographic characteristics of the nurses, occurrences of error in medication management practice among nurses. The study results presented in seven parts that are described below-

1. Socio Demographic Characteristic of Study Nurses
Table 1 showed the distribution of demographic characteristics of study participants by frequency, percentages, mean and slandered deviation. The result revealed that among 80 study participants, the average age was 34 (±6.8) years where range from 23 to 50 years. Almost half participants (52%) were between ages of 31-40 years. The majority of the participants (86%) were female. 90% of participants were married and 76% were religious Muslims. Around half (54%) were with Diploma-in Nursing followed by BSc in Nursing (35%). Among to the participants 60% were from general ward and 22% from ICU/CCU. The majority of the participants (82%) working experience were within 2 to 7 years and average work experience 6 (±5.8) years. In terms of monthly family income more than half of participants (66%) income level was 30001 to 40000 taka. In work shift most of the participants (86%) were from shifting and rotational duty and work 7 to 12 hours in a duty. In a day 33% of participants said that were deal with 20 patients in a duty while 19% of reported that they deal less than 5 patients in a day. In term of knowledge of medication error 52% participants said that they were known by the term of medication error that means near about half (48%) are not known about medication errors.

Table 1. Distribution of socio demographic characteristic of the participant: (N=80)

Variables		Frequency(n)	Percentage (%)	M±SD
Age in year (min – max) = (22-50)		80		34.1 ±6.8
	21-30 years	27	34	
	31-40 years	42	52	
	41-50 years	11	14	
Gender	Male	11	14	
	Female	69	86	
Religion	Muslim	61	76	
	Others	19	24	
Marital status	Married	72	90	
	Unmarried	08	10	
Professional education	Diploma	43	54	
	B.Sc in nursing	28	35	
	MSN/ MPH	09	11	
Monthly income	< 30,000/-	22	28	
	30,001-40,000	53	66	
	>40,000/-	05	06	
Working experience in year (2yrs -25 yrs)				**6.35 ±5.8**
	<7 years	65	82	
	>7 years	15	18	
Current working department	General ward	48	60	
	ICU/ CCU	18	22	
	Pediatric ward	06	08	
	Cabin	08	10	
Shift of duty	Fixed	11	14	
	Rotational	69	86	
Number of patients receive care from you/ day	<10 Patients	32	40	
	11-20 patients	22	27	
	>20 Patients	26	33	

2. Error in medication management

Table 2 showed the distribution of medication error occurrence of study participants by frequency, percentages, mean and slandered deviation. This result showed that the overall prevalence of medication error was 76% in which one to two times of the error occurrence were the highest percentages (63%). The mean score of this error was 2.56±1.99. For the types of ME there were six types of error, in which the error types were "giving drug after omission" (33%), followed by "wrong time" (29%). Again error in routes of ME the highest percentages were IV route (44%) followed by oral (26%). For identifying the reason of medication error most common cause were recognized by nurses "unclear prescription" (40%) and "heavy workload" (38%). The nurse who makes a medication error from them 85% are reported to the colleague or manager and 58% said that they receive training on medication management. For identifying why nurses do not report about error 36% of participant are stated that fear to shame with the colleague 21% are stated that ignorance.

Table 2. Distribution of error occurrence in medication management by nurses (N=80)

Variables	Frequency (n)	Percentage (%)	M±SD
Number of error done in MA-	61	76	2.56±1.99
1 to 2 time	39	63	
3 to 4 time	19	32	
4 time or more	03	05	
Types of error experienced-			
Wrong Patient	08	09	
Wrong Route	07	08	
Wrong Medication	02	02	
Wrong Time	25	29	
Wrong Dose	16	19	
Giving drug after omission	28	33	
Routes of error medication administration-			
Intravenous (IV)	37	44	
Intramuscular (IM)	11	13	

Oral	22	26	
Subcutaneous (Sc)	06	07	
Others	09	10	
Possible reason of medication error-			
Unclear prescription	48	40	
Improper Documentation	07	06	
High Workload	45	38	
Similar Name of Medication	12	11	
Not proper storage of medication	02	01	
New Procedure of treatment	05	04	
Number of time reported to colleague about error who done ME (N=61)	52	85	1.58±1.9
1 time	27	52	
2 time	21	40	
3 time or more	04	08	
Reason of not reporting.			
Fear to loosing job	02	03	
Fear of shame with colleague	21	37	
Fear of reported by physician	10	17	
Fear of patient attendance	03	05	
Lack of awareness about error	22	38	
Receive training on medication management	34	42.5	

3. Medication Management Practice of Nurses.

This part is divided in 2 part one is administration practice and the other one is storage and documentation practice.

3.1 Medication Administration Practice By Nurses

This part consist with 21 items, in which m medication administration practice of the study participants by frequency, percentage, mean and slandered deviation. Medication administration capacity was measured using 21 items with 5 point scale. The mean score of medication administration practice was 4.22 and SD 69. .Out of this 21 items the three highest practice was for "help the patient who is unable to take medication by self (4.65±.75), "avoid any combined injectable drug unnecessarily (4.65± .89) and "aware about similar looking of medication" (4.64±.56). Conversely, the lowest 3 practices are "Do not double check before administration of drug" (3.28 ±1.1), "not given medication with the verbal or telephone order" (3.29±1.5) and 'check the patient identification" (3.5±1.5).

Table 3 Distribution of medication administration practice of nurses (N =80)

	Variables	Never n(%)	Very rare (n%)	Occasionally (n%)	Almost Always (n%)	Always (n%)	M ±SD
1.	Maintain hand washing before and after medication.	05(07)	00	15(19)	10(12)	50(62)	4.31 ±.99
2.	Check physician signature, date and time.	00	16(20)	01(01)	09(11)	54(68)	4.26 ±1.2
3.	Check the patient identification.	15(19)	04(05)	21(26)	06(08)	34(42)	3.50 ±1.5
4.	Check the generic and trade name & level of medication.	02(02)	00	09(11)	13(17)	56(70)	4.51 ±.89
5.	Check vital sign before administer.	13(16)	00	28(35)	06(08)	33(41)	3.74±1.2
6.	Check right route of medication.	05(06)	00	11(14)	04(05)	60(75)	4.49 ±.95
7.	Double check before medication administration.	14(18)	03(04)	14(17)	02(02)	47(59)	3.28 ±1.1
8.	Never give drug without permission of the physician.	02(02)	02(02)	07(09)	07(09)	62(77)	4.56 ±.93
9.	Ask colleague or physician if order not clear.	00	03(04)	10(12)	11(13)	56(70)	4.50 ±.86
10.	Ask the patient about the history of drug allergy.	01(01)	08(10)	18(23)	15(19)	38(47)	4.01 ±1.1
11.	Aware about similar looking of medication.	00	01(01)	02(03)	13(16)	64(80)	4.64 ±.56
12.	Serious for check the expiry date of drug.	02(02)	08 10)	02(02)	05(06)	63(79)	4.50 ±1.1
13.	Ensure correct position.	06(07)	00	15(19)	08(10)	51(64)	4.30 ±1.0
14.	Maintain correct time and frequency.	01(01)	16(20)	15(19)	07(09)	41(51)	3.89±1.2

15.	Avoid any combined injectable drug unnecessarily.	03(04)	00	04(05)	08(10)	65(81)	4.65 ±.89
16.	Read literature for new drug.	02(02)	00	13(16)	17(22)	48(60)	4.39± .85
17.	Pay attention if patients complain for any symptom.	00	00	12 15)	08(10)	60(75)	4.60 ±.74
18.	Help the patient who is unable to take medication by self.	01(01)	00	07(09)	10(13)	62(77)	4.65 ±.75
19.	Not prefer the support staff to administer medication.	14(17)	03(04)	09(12)	25(31)	29(36)	3.60 ±1.4
20.	Keep ready to face any emergency.	02(02)	01(01)	12(15)	14(18)	51(64)	4.39±96
21.	Not given medication with the verbal or telephone order.	19(24)	06(07)	07(09)	29(36)	19(24)	3.29 ±1.5
	Total						**4.20±.69**

3.2 Medication Storage and Documentation Practice by Nurses

Table 4 showed that the medication storage and documentation practice of the study participants by frequency, percentage, mean and slandered deviation. Medication storage and documentation capacity was measured using 7 items with 5 point scale. Mean medication storage and documentation was 4.4 and SD .7. Out of these seven items the top practice was "put right level in right medication" (4.79±.57) and conversely the lowest practice was "keep record of any error done by self" (3.7± 1.7).

Table 4 Distribution of Medication Storage and Documentation Practice (N=80)

	Variables	Never	Very rare	Occasionally	Almost Always	Always	
		n (%)	n (%)	n (%)	n (%)	n (%)	M ±SD
1.	Keep record all administered medication.	01(01)	00	15(19)	10(12)	54(68)	4.46 ±.84
2.	Keep record if patient refuse to take/ withheld medication.	00	00	12(15)	12(15)	56(70)	4.45 ±.74
3.	Keep record of any error done by me.	21(26)	00	07(09)	06(07)	46(58)	3.70 ±1.7
4.	Keep the medication in proper temperature.	00	17(21)	01(01)	02(03)	60(75)	4.48 ±.96
5.	Put the medication in order.	00	05(07)	13(16)	01(01)	61(76)	4.31 ±1.2
6	The short date expiry drug keep in front.	01(01)	01(01)	11(14)	06(08)	81(76)	4.56 ±.87
7	Put right level in right medication.	00	01(01)	03(04)	08(10)	68(85)	4.79 ±.57
	Total						4.31±0.7

4. Relationship between socio-demographic characteristic and medication management practice (Medication storage and documentation practice)

Table 5 represent that the relationship between socio demographic characteristics, medication administration and storage and documentation practice among nurses by the bivariate relation ANOVA test and correlation where significance level is measured by <.05. In medication management practice this table showed that there is a significant relationship between socio demographic characteristic and working experience of (p = .04) and age (p=.04). On the other hand there is no significant relationship between socio-demographic characteristics and medication storage and documentation practice. In addition, the relationship between socio-demographic characteristics with error in medication management also measured using chi square test, and there was no any significant relation was found (Appendix I).

Table 5 Relationship between socio demographic characteristic and medication administration practice (N=80)

Variables	Category	Medication administration		Medication storage and documentation	
		M ±SD	t/F/r(p)	M ±SD	t/F/r(p)
Age			.80(.02)		.10(.36)
Professional education	Diploma	4.20 ± .70	1.9(.82)	4.37 ± .91	1.13(.32)
	BSc	4.20 ± .68		4.34 ± .90	
	MSC/MPH	4.35 ± .14		4.77 ± .23	
Working experience			.69(.04)	.01(.93)	.01(.93)
Current working department	General ward	4.21 ± .12	.33(.85)		.60(.65)
	ICU/ CCU	4.11 ± .17			
	Cabin	4.08 ± .33			
	Pediatric ward	4.22 ± .23			
Duty Shift	Fixed	4.35 ± .67	.68(.50)	4.50 ± .83	.427(.62)
	Rotational	4.20 ± .65		4.39 ± .78	
Duration of work	< 7 hours	4.15 ± .83	.30(.70)	4.50 ± .83	.427(.62)

	7-12 hours	4.23 ± .63		4.39 ± .78	
Number of patients getting care from you/ duty	< 10 Patients	4.27 ± .62		4.39 ± .52	1.16(.32)
	11-20 Patients	4.27 ± .62	1.89(.13)	4.45 ± .70	
	>20 Patients	4.8 ± .45		4.37 ± .86	

DISCUSSION:

Medication management is the important factor to establish patient safety. Although other health professional like doctor and pharmacist are also contributing with medication management, but nurses are the core person to deal with medication management. (Karavasiliadou & Athanasakis, 2014). Nurses play a major role in reducing errors in healthcare settings. Thus, they are the last line of defense to safeguard against errors as the administration is the last part of the medication process (Despims, Scott-Cawiezell, & Rouder, 2010). The aim of the present study to assess the nurses medication management practice on the basis of their age, education, working experience, working hour, deal how many patients in a duty, monthly income and marital status.

The study results showed that the mean value of their medication management practice was 4.25 out of 5 that means nurses of Bangladesh are very expert in medication management. Though 42.5% of study participants are stated that they receive training on medication management, but overall score of medication management practice were very well. Because in Bangladesh from the student life all nurses were involved with medication management practice. There was may be another issue that the study was conducted in a tertiary level hospital where generally nurses were too expert. For measuring the score of medication management researcher added some common variables which were the routine task for a nurse. Conversely, another study in Norway (Kvitingen, 2017), among 200 nurses where researcher found that the knowledge about medication management is not too high because they checked the knowledge of nurses regarding pharmacology and side effects of drug which is not included present study. So, the overall mean score of the present study is high.

From 21 items of medication administration practice nurses finding the lowest practice is not double check during medication administration medication (3.28 ±1.6). In public hospital of Bangladesh nurses are not enough with the comparisons of other developed country. So the workload was a reason for not practicing this option. However, another study in Norway (Alteren, Hermsted, White, & Jordan, 2018) stated the same problem due to nurses are interrupted by a physician during medication administration. In this study most of the participants were Muslims because Bangladesh is a Muslim country. Nursing in our country is a female oriented profession so, maximum participants were female. From all participants, we get just only 11% Master degree holder because masters in nursing/ Masers in Public Health is newly oriented in Bangladesh. Though Master degree holder quantity is law, but they are more expert in medication management than BSN/ Diploma holder. The mean value of Master's degree holder staff was (4.35±.14) higher than the BSN degree holder (4.20 ±.20) but statistically not significant. Another study in KSA by Al-Youssif *et al.,* (2013) and at Check Republic by Heczkova & Bulava, (2018) mentioned that the MSN nurses were more expert tan BSN nurses which is statistically significant (p=.006 & p=.002).

In the present study, 76% study participant stated that they were doing error one or more time in their practice life and the mean of their error is 2.56±1.99 which is too higher than Hong Kong (28.2%). Another study in Iran by Gholipour *et al.,* (2016) stated that majority of nurses (86%) doing error in medication management in their practice life. In Ethiopia an observational study by Feleke & Girma (2010) found that around 90% nurses are doing error during medicine administration. For the distribution of types majority of participants (33%) stated that they were giving drug after omission. However, Gholipour *et al.,* (2016) stated highest leading type of medication error was wrong dose (19%), and the second type was giving drug after omission that was same as present study. In Ethiopia 28% error was 'wrong time' and 26% error was 'wrong dose' (Feleke & Girma, 2010). The main cause of medication error were found 'unclear prescription' and 'workload' which is similar another study at Malaysia done by Johari, Shamsuddin, Idris, & Hussain (2013).

The present study revealed that there is a significant positive correlation relationship between age and medication administration practice witch is not similar to another study at Check Republic (Heczkova & Bulava, 2018). In our country the aged persons were more expert from newly oriented nurses.

Although the confidentiality of demographic information data was ensured and all identifiable data such as name and surname were eliminated, the participants may have provided incorrect answers to the questions as a result of fear of disclosure, blame as well as decreasing of professional reputation which can be considered as the limitation of my study. Limitations in the study may reduce the credibility of the findings, as well as the generalizability of the findings to a larger population since it was carried out in a specific region.

There are another some limitation of this study were mention in here. The study was based on a convenience sampling method that might have been a selection bias which can diminish the generalization of findings. The sample size was 80 which relatively small. The small sample size may have limited the generalizability of the study findings. Majority participants were female so this study did not find any difference between male and female regarding medication management practice.

CONCLUSION AND RECOMMENDATION:

Despite increased attention to patient safety and the quality of health care services, knowledge regarding medication errors is still lacking among nurses. This study showed that the practice of nurses regarding medication management is very high, but they also stated that more than two thirds were experienced with error in their practice life. Medication management is the basic function of a nurse and in this study were included some common issue regarding medication management that the skill shows was very high. Here also we identified some factor that contributing the error that is sloppy hand wring and heavy workload. By increasing some awareness regarding medication management and patient safety we can prevent the sloppy hand writing. Also we can take some theoretical initiative how we can give more care with low staff. It be concluded that there is significant difference in the medication management practice with nurses service experience. When a nurse become more experienced he/she develop their skill regarding medication management which may be help to reduce error. It is also have a significant relationship with the nurses age and medication management practice. If a nurse have a long carrier he become aged. So it also an important issue to make skill mix during nursing practice. At the end we can say, Establish of safe medication administration should be continue education program for nurses and special attention should be focus on new nurses. The massage for nurse administrator, they should give special attention to junior nurses regarding medication management and during making a duty schedule maintain the skill mix theory to prevent any error.

Hospital should provide continue education or training program to reduce medication error, especially junior or newly appointed nurse. Further study should be done to identify factors which influences error in medication management. If anyone wants to conduct this study again should be done with big sample size, select randomly and compare with the tertiary and local hospitals and also do the content analysis.

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