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Editorial

Mental stress experienced by medical students

***Prof. Dipali Rani Pal, Professor of Anatomy, JIMC**

** For Correspondence*

Everyone deals with some level of stress from time to time. Stress in some levels can actually be good for us, as the right kind of stress encourages us for good achievement or well being. However, when stress and anxiety exist for an extended period of time, they can become a burden or even a health risk. So it is our duty to recognize and understand feeling of stress & anxiety that experienced by medical students and how to manage it properly.

Beginning college is an exciting experience for most students, experienced with anxiety about leaving home for the first time. In the college dorm or hostel there is no one around to tell you to do your homework, get to bed at a right time, get off telephone, wake up early or eat a healthy breakfast before leaving for class. Reality of being independent is totally different from imagination of thrill of being independent. Reality is "you are responsible for yourself". Stress cause rash of Adrenaline & other stress hormones that produces various manifestations like slowed digestion, shaking, tunnel vision, accelerated breathing & heart rate, dilation of pupils, flushed skin. The process is often referred to as the fight or flight response.According to American Psychological Association, there are three types of stress: Acute, Episodic acute & Chronic acute stress.

Causes of stress & anxiety–

1. Living away from home: For many students, college is the first time they have lived away from home to a hostel or been away from their family for any significant period of time. Everything is different- the food, other students and the living accommodations in hostel. Most students eventually get used to these new environments without a problem.

2. Academic demands and examination phobia: This may be most common cause of long term stress. Initially student experienced difficulty in English as medium of teaching, lack of breathing space to cope with the existing curriculum. When students don't get the expected results, this also may cause lots of stress. If high school was a breeze for students, college may be the first time to get a low grade in test examination.

If a student can't pass repeatedly in a test examination or the output is not good as one's wish, ultimately become depressed for a certain period of time & don't attend the classes; even not share with other classmates. That stressing condition gradually detached them from all academic activities and daily life. That leads to chronic mental & physical illness and usually inhibits their ability to perform as normally they could.

3. Engaged long time in virtual world: students are wasting their study time in internet like facebook, messenger, whatsApp, video call etc.

4. Financial problem: loss of parents or uncertainty of economic support

5. Abuse by drugs: may be addicted to alcohol, marijuana, cocaine, narcotics etc

6. Any sexual abuse– like homosexuality

Ways to reduce or manage stress & anxiety –

1. Attend all classes regularly & study as much as you can.

2. Learn to study more effectively by finding someone, may be teachers to help more effectively by checking their study.

3. Abstain from misuse or overuse of internet.

4. Get enough sleep - inadequate sleep reduces memory

5. To maintain a good dietary habit & take balanced diet- not to take excessive caffeine & junk food.

6. Engage in extracurricular activities like, sports.

7. Away from addicted substances & find ways to calm down by relaxation technique.

8. Think positively- actually failure leads to success.

9. To relief stress talk with academic mentors or Psychologists or Counselors to seek advice or guidance. It is the healthiest & most positive thing that a therapist can do.

Medical education is totally different from other education. Students initial dream & expectation may not match. So the medical students should have enough strength to cope this stressing situation .They should adapt the academic discipline as early as possible.

Original Article

Anthropometric Study of Nose on Bangladeshi Adult Garo Male

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Abstract

Objectives: *The present cross sectional descriptive type of study provides a standard for Bangladeshi Garo male regarding nasal length, nasal breadth & nasal index. The current study also generates different nose types on the basis of nasal index.*

Methods: *The study was carried out at different areas of Mymensingh, Bangladesh and the period was from July, 2015 to June, 2016 on 121 Garo male between 25-45 years of age. The measurements were taken by digital Vernier caliper. Data were tabulated and statistically analyzed using Microsoft excel and SPSS software.*

Results: *The mean (±SD) nasal length and nasal breadth were 5.28 (±0.45) cm and 4.06 (±0.30) cm centimeters respectively. The mean (±SD) nasal index is 77.35 (±7.63). Considering on nasal index majority of Bangladeshi garo male possesses mesorrhine (66%) type of nose.*

Conclusion: *The results of this study would be useful for physical anthropologist, Forensic Medicine experts, plastic and reconstructive surgeon.*

Key words: *Anthropometry, Nasion, Subnasale,Alare, Garo male.*

Introduction

Anthropometry is concerned with the measurements of physical size and shapes of human body. It is a technique used in both physical and clinical anthropology comprising of precisely and systematically measured human parts[1]. Anthropometry is the science of measurement of humans for identification of an individual whether living, dead or in the form of a skeleton [2].The nose is an organ that plays a key role in performing certain anatomical and physiologic functions. In addition, it is the mostprominent organ on the face, located in its center. Furthermore, it forms a harmony with other facial structures [3]. Bangladesh is a pluralistic society where people from different religions, races and castes have been living together since time immemorial. Among 30 ethnic minority groups living in different parts of the country, the "Garo" is one of the larger marginalized ethnic minority groups in Bangladesh. This matriarchal community differ noticeably from the rest of the population in term of their appearance, language, religion and social organization[4].

Nasion is the midpoint of the frontonasal suture. The easiest way to find this point is to palpate the subject's superior nasal bridge with a tip finger until one feel the groove of the nasofrontal suture just below the brow ridge, above the level of the medial canthi.Subnasale is the junction between the lower border of the nasal septum and the cutaneous portions of upper lip in the midline.Alare is the most lateral point on the nasal ala on each side of the nose.Anthropometric studies are mostly conducted with the aim of obtaining the characteristics of ethnic groups inhabiting a particular geographical region, it not only assist in understanding the frequency distribution of human morphologies but also in providing the basis for a comparison among different races. Anthropometric studies are conducted on the age, sex and racial/ethnic groups in certain geographical zones to obtain standard physical measurement and compared with the standards of other countries [5].

Figure 1: Procedure of measurement of nasal length

Meterials & Methods:

The study was observational and cross-sectional in nature with both descriptive and analytical components. The study was carried out at different areas of Mymensingh (Mymensing sadar, Haluaghat, Madhuopor) and the period was from July, 2015 to June, 2016. The participants were 25-45 years aged 121 Bangladeshi Garo male residing in different areas of Mymensingh and sampling technique was purposive type. They were without any history of acquired or genetic craniofacial anomalies.The subject stoods erect with the head in the Frankfurt plane. The heels were together with the weight distributed equally on both feet. The shoulders and upper extremities were relaxed. The measurement was taken at the maximum point of quiet respiration[6].For measuring the nasal length, the inner edge of the fixed arm was placed to the subnasale, holding it in place with thumb and index fingers. The movable arm was slide up to the nasion and then reading was taken (Fig. 1).

For measuring the nasal width, the participant was asked to sit relaxed without flaring the nostrils or otherwise moving the nasal tip at the time of taking the measurement, so that the dimensions of the nose did not alter. The digital slide caliper was opened slightly wider than the width of participant's nose. Then the nose was approached with the caliper until the tips were just passing the maximum lateral curvature of alae. Carefully the tips were brought close until the inner edges of the arms of the caliper just touched the lateral edges of the alae (alare). Care was taken not to compress these soft tissue landmarks when measurement was taken (Fig. 2).

Figure 2: Procedure of measurement of nasal breadth

Nasal index: It is the ratio of the nasal breadth to the nasal length expressed as a percentage

$$\text{Nasal index} = \frac{\text{Nose width}}{\text{Nose length}} \times 100$$

Result

Table 1: Linear measurements of the nose of Garo male

Linear variable(cm)	Range (cm)		Mean	(±SD)
	maximum	minimum		
Nasal length	7.68	4.22	5.28	0.45
Nasal breadth	4.93	3.47	4.06	0.30

The nasal length of 121 Garo male of 25 to 45 years age ranged from 4.22 cm to 7.68 cm. More than 71% respondents were measured within the range of 5 cm to 6 cm as shown in figure 3

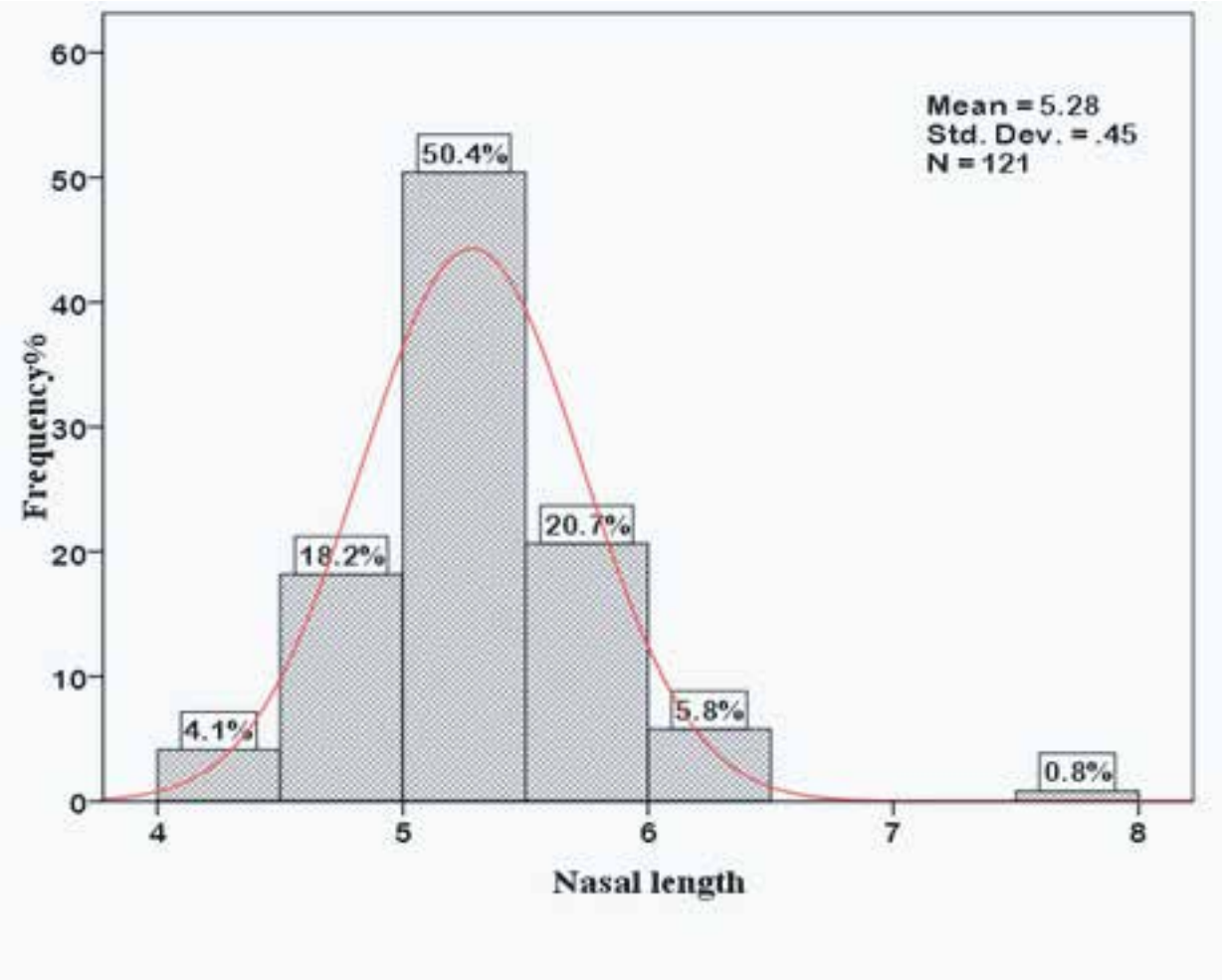

Figure 3: Histogram showing the frequency distribution ofnasal length (n=121)

The nasal breadth of 121 Garo male of 25 to 45 years age ranged from 3.47 cm to 4.93 cm. More than 89% respondents were measured within the range of 3.5 cm to 4.5 cm as shown in figure 4

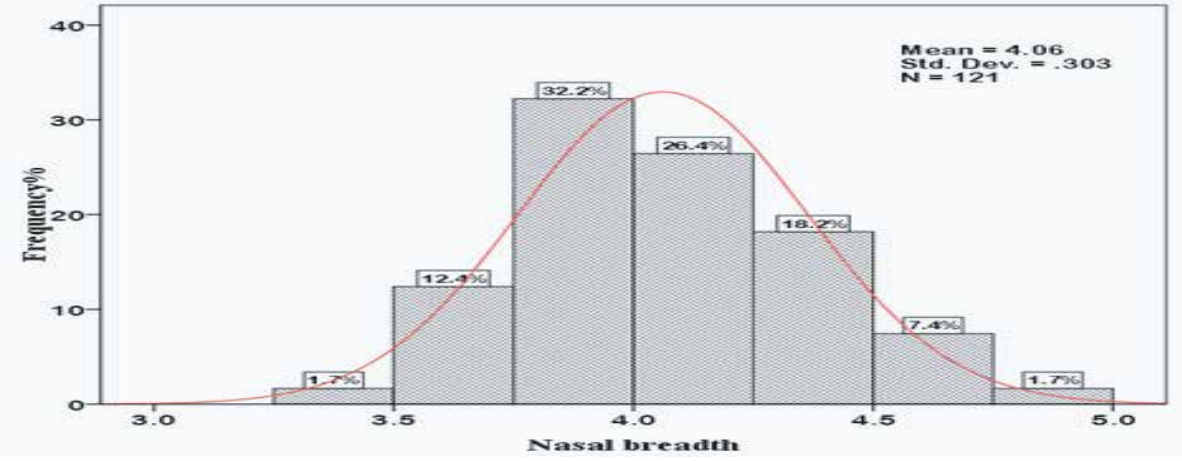

Figure 4: Frequency distribution of nasal breadth (n=121)

Table 2:Nasal index of the Garo male:

Index	Rang e		Mean	(±SD)
	maximum	minimum		
Nasal index	95.36	49.61	77.35	7.63

The frequencies of different types of nose based on the nasal index found in the Garo males are shown in Figure 5. The most common nose type is "mesorrhine" (medium nose) 66% and the next common type is "platyrrhine" (broad nose) 42.62%.

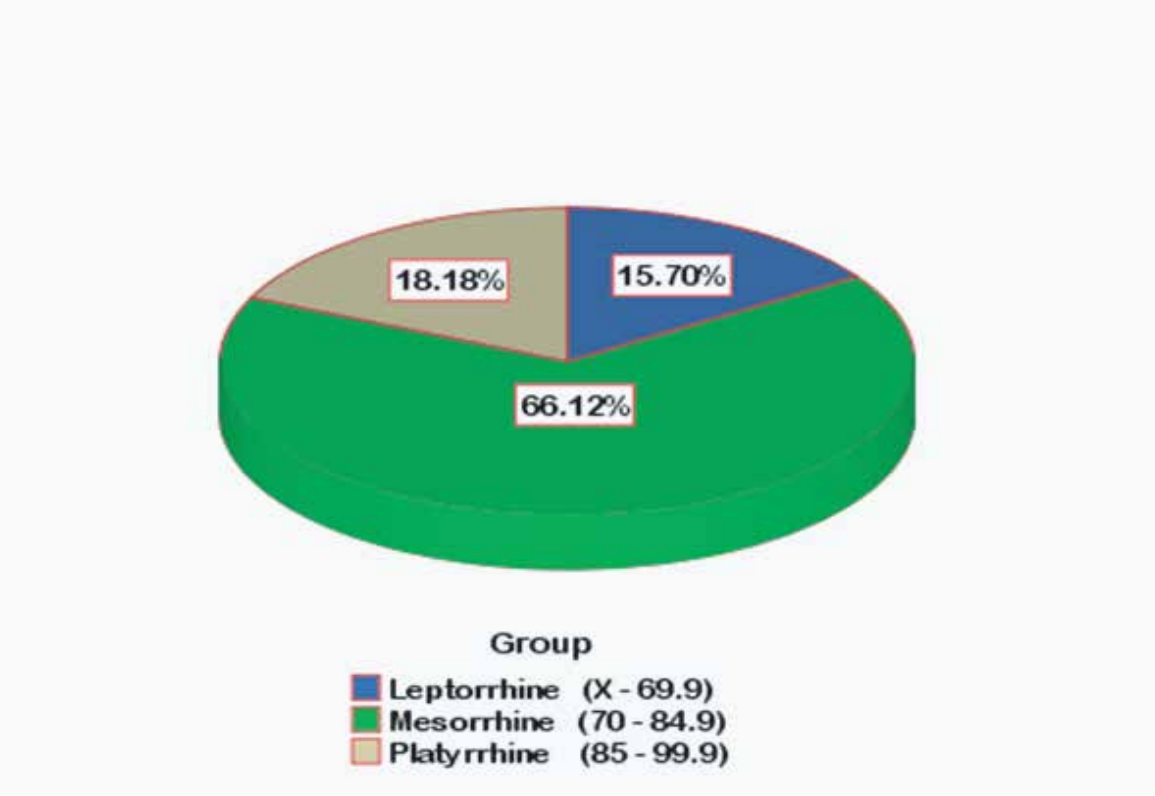

Figure 5: Relative percentage frequencies of different nose types based on the nasal index in the Garo males. The values within parenthesis represent the ranges of the nasal index defining different types of the face.

Discussion

According to the present study, in Garo male, the minimum value of mean nasal lengthwas 4.22 cm and the maximum value was 7.68 cm. The mean nasal length was 5.28(±0.45) cm. Nagle, Teibe&Kapoka[7] found the meannasal length in Latvian residents is 5.85±0.61cm which is higher than the mean value of the Bangadeshi Garo male according to the present study.Edlar et al. [8] observed the mean nasallength of UK populationis 5.84 cm which is higher than the mean value of the Bangadeshi Garo male according to the present study.

Keraca et al. [9] conducted a study on morphometric facial analysis of Turkish healthy adult and describe the mean nasallengthas 5.31±0.44cm. They also compared it with Malaysian Indian and North American Caucasian and found 5.19±0.36 cm and 5.32±0.33cm respectively. North American Caucasian, Turkish healthy adult and Malaysian Indian possess almost similar value as that of Bangadeshi Garo male according the mean value of the present study. Olapido, Okoh& Hart [10] described the mean nasal length of adult Ijaws of Nigeria as 4.08±0.25 cm. Bangadeshi Garo male according to the present study possess higher value than adult Ijaws of Nigeria.Zolbinet al. [11]carried out a study of nasal parameters of Qazvin residents, Iran and observed the mean nasal length is 6.06±0.29 cm which is higher than the mean value of the Bangadeshi Garo male according to the present study.Farkas, Katic& Forrest [12] stated the mean nose length in North American white young adult maleis 5.30 cm& in Azerbaijan maleis 5.59 cm. Azerbaijan male possess higher value and North American white young adult male possess lower mean value than the mean value of the Bangadeshi Garo male according to the present study.

According to the present study, in Garo male, the minimum value of mean nasal breadthwas 3.47 cm and the maximum value was 4.93 cm. The mean nasal breadth was 4.06(±0.30) cm.Nagle, Teibe&Kapoka7found the meannasal breadth in Latvian residents is 3.57±0.28 cm which is lower than the mean value of the Bangadeshi Garo male according to the present study. Gorantla [13]described the mean nasal breadthof Boston University student as 3.76±0.26cm.

According to the current study which is slightly lower than the mean value of the Bangadeshi Garo male.Olapido, Okoh& Hart 10described the mean nasal breadth of adult Ijaws of Nigeria as4.06±0.25cm. According to the present study which is almost alike to the mean value of the Bangadeshi Garo male.

Zolbinet al. [11]carried out a study of nasal parameters of Qazvin residents, Iran and observed the mean nasal breadth is 3.8±0.23 cm. According to the present study which is almost alike to the mean value of the Bangadeshi Garo male. Farkas, Katic& Forrest [12]stated the mean nasal breadth in North American white young adult maleis3.47 cm and in Azerbaijan maleis3.57 cm. Azerbaijan male and North American white young adult male possess lower mean value than the mean value of the Bangadeshi Garo male according to the present study.

According to the present study, in Garo male, the minimum value of mean nasal index was 49.61 and the maximum value was 95.36. The mean nasal index was 77.35(±7.63).

Mahony[14] described the mean nasal index in Native American populations as 80.11±7.21in male. The current study shows that Bangladeshi Gao male possess slightly lower cephalic index than Native American population.

Olapido, Okoh& Hart [10] described the mean nasal index of adult Ijaws of Nigeria as99.83±7.0. According to the present study Bangadeshi Garo male have lower nasal index than adult Ijaws of Nigeria.

Zolbinet al. [11]carried out a study of nasal parameters of Qazvin residents, Iran and observed the mean nasal index is 62.54±5.78. According to the present study Bangadeshi Garo male have higher nasal index than Qazvin residents, Iran. Olapidoet al.[15] described the mean nasal index in adult Omoku indigenes of Nigeriaas 86.09±9.60. According to the present study Bangadeshi Garo male have lower nasal index than adult Ijaws of Nigeria. Pandey [16] defined the mean nasal index in male of Onges, India as 87.43±1.27 which is higher than the mean value of the Bangadeshi Garo male according to the present study.Staka, Dragidella&Dasha[17] described the mean nasal index in Albanian male as 67.07±6.67. According to the present study Bangadeshi Garo male have higher nasal index than Albanian male.

Umar, Asala&Hambolu[18] observed the mean nasal index in Hausa andYoruba populationare 90.05% and 94.26% respectively.

According to the present study Bangadeshi Garo male have lower nasal index than Hausa andYoruba populatio

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Original Article

Age-wise prescribing pattern of antihypertensive drugs in a tertiary care hospital

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** For Correspondence*

Abstract

Objective: *The present study was conducted to see the use Age-wise prescribing pattern of antihypertensive drugs in a tertiary care hospital.*

Methods: *It was an observational type of descriptive cross sectional study. The study was performed among 400 hypertensive patients (both indoor and outdoor) of Cardiology department in MMCH who received antihypertensive drug.*

Results:*Out of 400 hypertensive patients 67% were male and 33% were female. Maximum patients (54%) found in 40 to 59 years age group and ≥ 60 years age group (37.5%). Mean age of the patients was 55.02 ± 12.47 years. Mean systolic BP was 146.74 ± 28.28 and diastolic BP was 90.60 ± 14.27 mmHg and the highest percentage of patient were found in Stage 2 HTN (50.25%) according to JNC-7 guidelines. In our study 5 groups of antihypertensive were prescribed (ARB, ACEI, BB, Diuretics, and CCB). In younger age group (18 to 39 years) ARB (34.48%) and in middle (40 to 59 years) & elderly (≥ 60) Diuretics were used most frequently (25.60% and 32.42% respectively).*

Keywords: *Age of hypertensive patients, antihypertensive drugs*

Introduction

Hypertension is an important risk factors for cardiovascular accidents, coronary heart disease and cardiac hypertrophy with heart failure, aortic dissection and renal failure[1]. The worldwide burden of hypertension in 2000 was estimated to be 972 million or 26.4% of the adult world population, 333 million in economically developed and 639 million in economically developing countries. It has been estimated that by 2025, 1.56 billion individuals will have hypertension; an increase of 60% from 2000. Hypertension is the commonest preventable cause of cardiovascular disease in the world[2]. It tends to be familial and the prevalence of essential hypertension increases with age and individuals with relatively high blood pressure at young ages are at increased risk for the subsequent development of hypertension[3].

Report 2002 of the World Health Organization states that high blood pressure is the primary or secondary cause of 50% of all cardiovascular diseases worldwide Normal level of both SBP and DBP are particularly important for the effective function of vital organs such as heart, brain and kidneys as well as for overall health and wellbeing[1]. Essential hypertension constitutes about 95% of all cases of hypertension and according to Carretero and Oparil [2]. High blood pressure contributes to 75% of all strokes and heart attacks. Other risk factors combined with significantly high blood pressure can increase the likelihood of complications. HTN and Diabetes Mellitus (DM) frequently coexist which increases with age. HTN is about twice as common in patients with DM than in those without (8%). target BP value of 130/80mm Hg, a much higher proportion than patients without diabetes.

Blood pressure control is more importantthan tight blood glucose control at preventing cardiovascular events. The concordance of hypertension and diabetes is increased; hypertension is disproportionately higher in diabetes, while persons with elevated BP are two and half times more likely to develop diabetes within 5 years [4]. In the United States, DM is the leading cause of end-stage renal disease (ESRD), traumatic lower extremity amputations, and adult blindness. It also predisposes to cardiovascular diseases. With an increasing incidence worldwide, DM will be a leading cause of morbidity and mortality for the foreseeable future [5].Hypertension can contribute to as much as 75 % of all diabetes mellitus related complications, including nephropathy and end stage renal disease. The progressive decline in glomerular function that is seen in diabetic patients with hypertension, especially those with albuminuria can be slowed with antihypertensive treatment [6].

Therefore, the prevention, detection, treatment and control of this condition demand high priority [1]. Management of hypertension is an important step to decrease the mortality and morbidity of cardiovascular disease and to prevent uncontrolled complications [7]. aid of Statistical Package for Social Sciences (SPSS) version 21 software to generate descriptive statistics. The data collected was analyzed with frequency, simple percentage, mean and standard deviation. The results presented in texts, tables and figures.

Materials & Methods:

This study was a record based observational type of descriptive cross-sectional study was conducted for a period of 4 months from July 2015 to October 2015 in Cardiology department of Mymensingh Medical College Hospital, Mymensingh.400 patientwere collected from both indoor and outdoor.This study includes hospital In-patients and Out-patients with hypertension with or without IHD and DM treated for hypertension at Cardiology department.Theinclusion criteria were:Patient with the age group ≥18 years, hypertension with or withoutischemic heart disease, hypertension with or without DM. Exclusion criteria were: patients with disease like hepatic disease and pregnancy.Non-Random sampling was employed for collecting data.The entire relevant data were analyzed with the

Results

Out of 400 patients, 268 (67%) were male and 132 (33%) were female.So, male were found more than their female counterparts.out of 400 patients, 32 (8%) were found in between 18 to <40 years (male 4% & female 4%), 218 (54%) were in between 40 to <60 years and 150 (37.5%) were ≥60 years. So, the maximum number and percentage of patients were found in between 40 to <60 years age group (54%) and lowest no. and percentage of patients patients werefound in between 18-<40 years age group (8%) in both sexes.

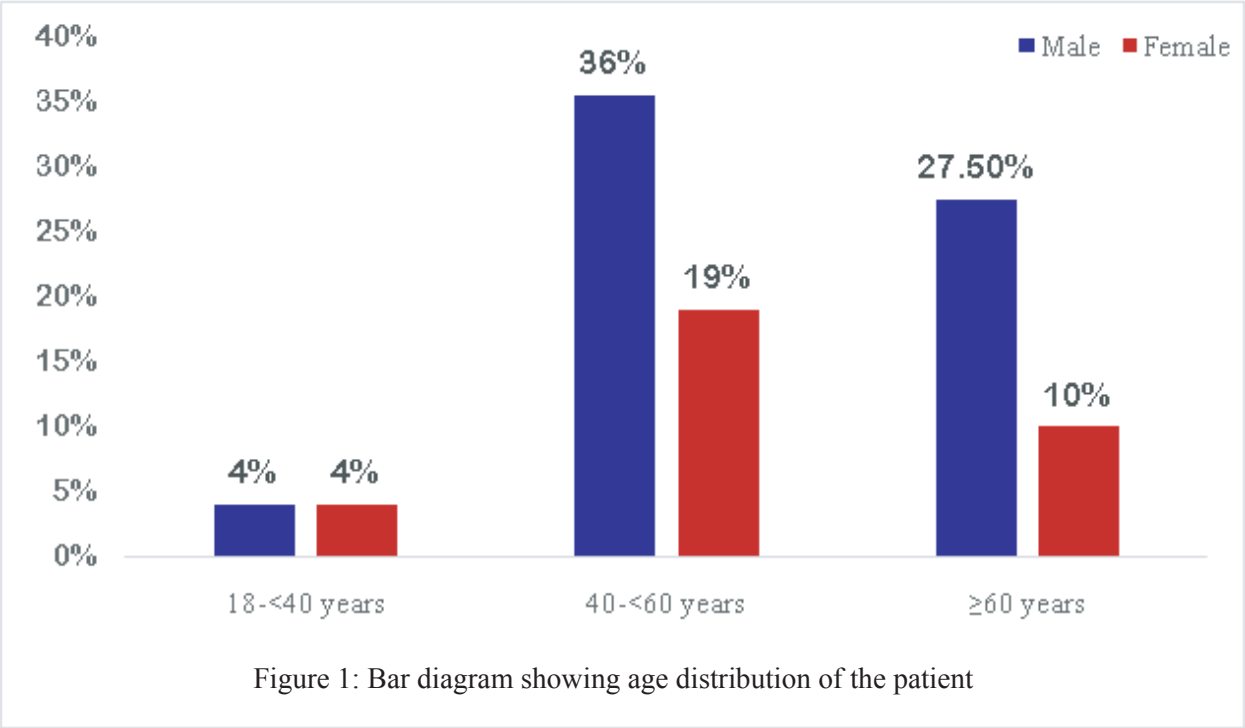

Figure 1: Bar diagram showing age distribution of the patient

Table 1: Demographic Characteristics (age) of Patient

Demographic Characteristics	Male	Female	Total
Mean age (years)	56.45	52.12	55.02
Standard deviation	12.20	12.58	12.47
Minimum age (years)	20	25	20
Maximum age (years)	90	90	90

Table 2: Age -wise prescribing pattern of antihypertensive drugs

Age (years)	Diuretics	ACEI	ARB	BB	CCB	Total
18 to <40	07 (12.07%)	05 (8.62%)	20 (34.48%)	16 (27.59%)	10 (17.24%)	58 (100%)
40 to <60	86 (25.60%)	81 (24.11%)	55 (16.37%)	71 (21.13%)	43 (12.80%)	336 (100%)
≥60	83 (32.42%)	62 (24.22%)	53 (20.70%)	37 (14.45%)	21 (8.20%)	256 (100%)

Table 2 shows in 18 to <40 years most commonly prescribed drug was ARB in 20 cases (34.48%) followed by BB 16 cases (27.59%), CCB in 10 cases (17.24%), Diuretics in 7 cases (12.07%) and ACEI in 5 cases (8.62%). In 40 to <60 years age group most frequently prescribed drug was diuretics that is 86 (25.60%) and then ACEI 81 (24.11%), BB 71 (21.13%), ARB 55 (16.37%) and CCB in 43 cases (12.80%). And in ≥60 years age group Diuretics was the highest prescribed drug 83 (32.42%) followed by ACEI 62 (24.22%), ARB 53 (20.70%), BB 37 (14.45%) and CCB prescribed in 21 patients (8.20%).So, in 18 to <40 age groups ARB and BB was the most commonly prescribed drugs. In 40 to <60 and ≥60 age groups Diuretics and ACEI were the most commonly prescribed drugs.

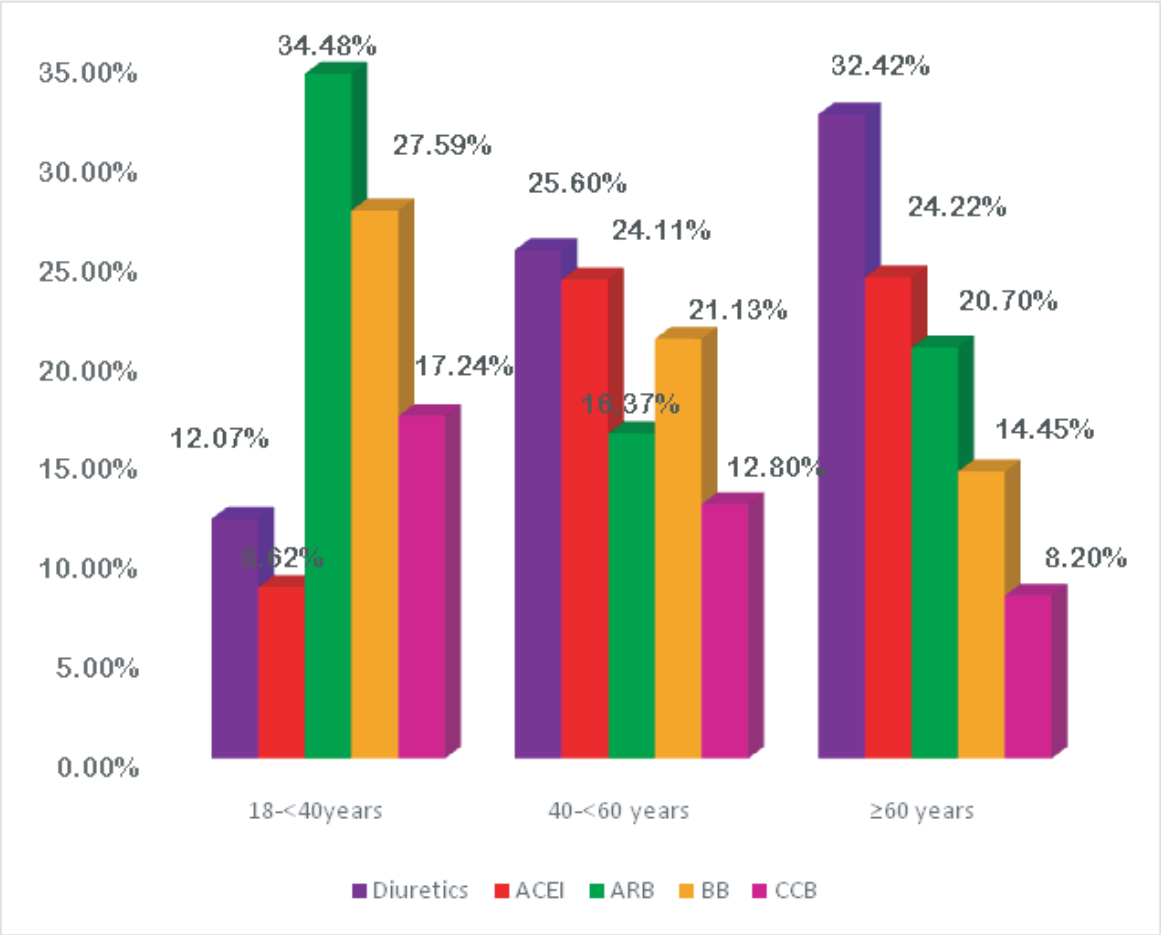

Figure 2: Multiple bar diagram showing age-wise prescribing pattern of antihypertensive.

Discussion

The study was conducted during the period of July 2015 to June 2016 in the department of Cardiology, Mymensingh Medical College Hospital, Mymensingh to evaluate the use of antihypertensive in hypertension with or without ischemic heart disease and DM at Cardiology Department. It was an observational type of descriptive cross sectional study.In this study the prevalence of hypertension was seen more in male (67%) than their female counterparts (33%) which corresponds to the findings of other studies Joseph S, Varghese N & Thomas L[1], Konwar M, Paul PK & Das S[3]and Rachana PR, Anuradha HV &Shivamurthy MC [8].In presentstudy maximum no. of patients belongs to age group 40 to <60 years (54%) followed by age group ≥60 years. The above resultgives an indication that advanced age is one of the risk factor for hypertension in Bangladesh.

This finding is analogous to other studies Joseph S, Varghese N & Thomas[1], Anusha N, Paul M, Jeyabalane et al. [9], Pyarelal [10] and Ariefet al.[11]. Another study done by Pushpalatha C, Laxman RN, Mohsin M[7] Telangana, India and found maximum number of patients belong to age group 60-69 years in Cardiology indoor unit which was different from this study.In our study mean age of the patients was 55.02 ±12.47 years. A study in New Delhi, India done by Sharma AK, Dahiya N, Kairi JK et al. [12] and found the mean age of the patients was 58.25 years which was similar to this study. Another study conducted by Madhwar A, Gupta D, Singh S et al. [13]and found the mean age of the patients was 58.9±11.9 years

which was also similar to the present study. In the current study ARB and BB were the most commonly prescribed drug which were 34.48% and 27.59% respectively in 18 to <40 years age group. In 40 to <60 years age group most frequently prescribed drug was diuretics that is 86 (25.60%) and then ACEI 81 (24.11%). And in ≥60 years age group Diuretics was the highest prescribed drug 83 (32.42%) followed by ACEI 62 (24.22%), ARB 53 (20.70%). So, in all age group ARB was used and Diuretics and ACEI were used in middle and elderly group. A study in India found that diuretics was the most commonly prescribed group of drugs in all the three age groups which was little bit different from this study Bajaj JK, Sood M, Singh SJ et al. [14] and Chou CC, Lee MS, Ke CH et al. [15].

Conclusion

Hypertension is a chronic incurable disease. Maintaining the control of blood pressure is very important in HTN. From our study it was concluded that HTN is more prevalent in male than female, in 40 to < 60 & ≥ 60 years age group. In the current study ARB and BB were the most commonly prescribed drug in 18 to <40 years age group. In 40 to <60 years age group most frequently prescribed drug was diuretics. And in ≥60 years age group Diuretics was the highest prescribed drug followed by ACEI, ARB. in all age group ARB was used and Diuretics and ACEI were used in middle and elderly group.

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Original Article

Mental Stress among Teachers of Selected Public Primary Schools in Dhaka City

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Abstract

Background:*This cross-sectional study was conducted in 27 public primary schools, located in the Dhaka city of Bangladesh. The selection criteria for the school selection were: Grade a national primary school which have more than 500 students. Teacher's name lists were obtained from school administrator and they were selected based on voluntary basis. About 200 primary school teachers agreed to participate in the study. However, they have to fulfil the criteria such as having a minimum of one-year teaching experience, and not diagnosed with any chronic medical problem or take any medication and alcohol. Written consents were obtained from the respondents.*

Objective:*To assess the mental stress among teachers of selected public primary schools in Dhaka city*

Materials and Methods:*This was a cross-sectional study which was conducted at Public Primary Schools of Dhaka City.The study was conducted for a period o f 1 year which effect from 1st January 2015 to 31st December 2015,all the Public Primary School Teachers (male and female) experienced at least 1 year teaching and total respondents were 200The sampling technique will be convenience sampling technique with eligible criteria and willing to participate in the study.*

Result: *Data analysis showed that most of the school workload was extreme. Out of 200 respondents 75(37.5%) extreme, medium workload 63(31.5%), severe workload 61(30.5%) and No or less workload is only 1 respond out of 200 teachers.*

Conclusion: *The study results show that out of 200 respondents near 88.0% were in medium level of stress and rest were in danger of high level of stress*

Key words: *Mental Stress, Teachers, Public primary School, Multifactorial reasons.*

Introduction

Education is an important issue for the development of countries, and teachers are the most significant factor of the education process. Primary education has a crucial role in individuals' improvement. During primary education, children gain the basic knowledge and skills, and teachers are the basic role models for primary school pupils [1].

Teaching professions comes with others roles and commitments to be made towards students, the community and the profession it self. Teachers are responsible to guide students to learn by providing clear directions and explanation in order to educate the future generation. Teachers must be role models

and realize that each action taken will reflect upon his/her professional status as teachers.Teaching within the organizational context of a school places staff with diverse personalities and varying degrees of professional skills training into situation that require frequent interaction and cooperation. The environment of the school is frequently demanding, requiring workers to be emotionally involved with students as well as being mentally and physically challenged. In New Zealand, education has been subjected to extensive changes and with rapid technological advances. Our school environment are struggling to adapt and keep up with new political and administrative demands [2]. Not only is there increasing criticism via the media, but there are increasing financial problems in our schools which provide the added burden of cost containment which is leading to unclear goals and long term vision. This cross-sectional study determined the workplace stressors, stress levels, mental health status and their influencing factors, among primary school teachers in the Dhaka City, Bangladesh. Twenty seven public primary schools in Dhaka City which fulfil the inclusive criteria were randomly selected from a list obtained from the Ministry of Education website. Two hundred teachers from the selected school, volunteered to participate in the study. A questionnaire was used to determine socio-demographic background, working information and medical history. Teacher Stress Inventory was used to measure the stressor and stress levels; while General Health Questionnaire was used to measure the mental health status. Results showed that most of the teachers experience medium stress level (87.5%) and (12.5%) had high mental health status. Workload was the main stressor in the school environment (mean= 3.2988).

Teaching has been proven as a stressful job based on previous studies [3]. They reported that the working environment for teachers is highly stress-provoking. Teacher stress is defined as an uncomfortable feeling, negative emotion such as anger, anxiety and pressure which originated from their work[4]. Teachers have to cope with their task to give knowledge; as well as to educate students to be good citizens. With the increasing demand from students and parents, as well as the job requirement made by Malaysia's Ministry of Education, the stress levels are steadily increasing. Teachers in Selangor and Kuala Lumpur areas have been categorized as 'stressful teachers' since they have to spend 74 hours per week in teaching, as well as re involved in curriculum activities [5].Stress has great importance for all organizations including schools; it can negatively affect teachers' physiological and psychological well-being which can adversely affect schools' effectiveness. Students' learning is also negatively influenced by teachers' job stress [6]. Stress experienced by teachers is a subject of intense interest in recent years. Various factors have been identified linked with teacher's occupational stress. The most important of these factors are: business requirements, many different activities within the school environment, lack of professional recognition, discipline problems in the classroom, bureaucracy, lack of support, workload, time pressure, lack of benefits [7]. It has been argued that when teachers feel that they invest more in students, colleagues, and school than they receive from them, then they are more likely to face emotional, psychological and occupational difficulties [8]. The sources of stress experienced by a particular teacher are unique to him/her and depend on the interaction between personality, values and skills and the circumstances. All mentioned stressors have been shown to lead to teachers' burnout. Stress could simply be defined as an unpleasant emotion, which arises when people worry that they could not cope with excessive pressures or other types of demand placed upon them[9]. They had exhaustively defined teacher stress as a response to negative effect such as anger or depression by a teacher, usually accompanied by potentially pathogenic, physiological and biochemical changes resulting from aspects of the teacher's job, and mediated by the perception that the demands made upon the teacher constitute a threat to his or her self-esteem or well-being and by coping mechanisms activated to reduce the perceived threat.

Materials and Methods

This was a cross-sectional study which was conducted at Public Primary Schools of Dhaka City.

The study was conducted for a period of 1 year which effect from 1st January 2015 to 31st December 2015, out of which 30th October to 12th November was spent for data collection.

Inclusion Criteria:

Primary school teachers, Teaching experience minimum 1 year, Informed written consent,Willing to participate

Exclusion Criteria:

Newly joined teachers (work experience less than 1 year), Diagnosed mentally ill patients, Not willing to participate. .

The sampling technique would be convenience sampling technique with eligible criteria and willing to participate in the study, Data were collected by face to face interviewing the respondents with the pretested questionnaire. One respondent was interviewed once. No medical examination or test was done, A Self-administered Semi-structured questionnaire (by using the Teacher stress inventory questionnaire.)

The questionnaire contained both open click and close-ended questions, Pre testing was done among teachers other than study areas for finalize the questionnaire. After completion of data collection within due time, those were checked, verified, edited for consistency rechecked. And then data were transferred to suitable designed dummy tables for processing and subsequent analysis. Data obtained from the instrument were analyzed by the investigator and were processed, tabulated & in computer by SPSS program 19 verson. The findings of the analyzed were presented in the form of tables and graphs.

Results

Table 1: Stress Scores According to the Stressors

Domain	Mean	S.D	Minimum	Maximum
Stress relating to workload	3.2988	0.38314	2.25	4.00
Stress relating to students behavior	2.1820	0.28012	1.60	3.00
Stress relating to interpersonal factors	1.7083	0.44325	1.00	3.33
Stress relating to time and resources	2.2263	0.44875	1.25	3.75
Stress relating to recognition in job	2.5500	0.57808	1.50	4.00

Table 1: shows that Stress relating to workload mean was 3.2988, S.D=±0.38314, minimum was 2.25, and maximum was 4.00.Stress relating to students behavior mean and S.D was 2.1820 and ±0.28012.Stress relating to interpersonal factors mean and S.D was 1.70383 and± 0.44325.Stress relating to time and resources mean and S.D was 2.2263 and± 0.44875 and Stress relating to recognition in job mean and S.D was 2.5500 and ±0.57808

Table 2: Statistics of total stress score in relation to factors

Characteristics	Group	N	Mean	Std. Deviation	Std. Error Mean	Significance
Sex	Male	18	41.89	3.724	.878	t=1.406 *p=0.161
	Female	182	43.37	4.306	.319	
Family type	Nuclear	140	43.59	4.295	.363	t=1.784 *p=0.076
	Joint	60	42.42	4.130	.533	
Education	SSC	14	42.57	2.738	.732	F=0.341 **p=0.796
	HSC	19	42.53	4.464	1.024	
	Graduation	50	43.36	4.557	.644	
	Post-graduation	117	43.38	4.291	.397	
Marital status	Married	173	43.29	4.121	.313	F=1.457 **p=0.217
	Unmarried	18	42.22	5.505	1.297	
	Widow	6	45.00	4.099	1.673	
	Divorced	2	46.00	1.414	1.000	
	Separated	1	36.00	.	.	

* P-value reached from independent samples‘t’ test

** P-value reached from one way ANOVA

There was no significant association found between total stress scores of mental stress level with sex and family type. There was no significant association found between total stress scores of mental stress level with education and marital status

Table 3: Relation between stress level with sex and education of the respondents

Characteristics	Group	Stress level		Total	p value
		Medium stress	High stress		
Sex of the respondents	Male	17 (94.4%)	1 (5.6%)	18 (100.0%)	*p= 0.706
	Female	158 (86.8%)	24 (13.2%)	182 (100.0%)	
Education of the respondents	SSC	13 (92.9%)	1 (7.1%)	14 (100.0%)	*p= 0.966
	HSC	17 (89.5%)	2 (10.5%)	19 (100.0%)	
	Graduation	43 (86.0%)	7 (14.0%)	50 (100.0%)	
	Post-graduation	102 (87.2%)	15 (12.8%)	117 (100.0%)	

* p value reached from Fishers exact test

There was no significant association found between total scores of mental stress with sex and educational qualification of the respondents.

Discussion

The study was carried out among 200 public primary school teachers in Dhaka city. The duration of data collection was from 30th October to 12th November 2015.There was no missing data and nobody refused to participate in this study.The overall study results showed that majority of the respondents experienced medium level of stress 175(87.5%), but another study showed 71.7% of total 272 respondents.Among the study population most of were female 182(91%) and rest 18(9%) were male teachers, where asSamad NIA et al. [10] in the Klang Valley, Malaysia the female teachers were also 66.5% and male were 33.5%.Maximum respondents were in the age group (31-40) years of total no 104 out of 200.Mean age was 38.55 years, median was 36.00,S.D=±9.268.Minmum age was 22 and the maximum age was 60. In other study showed mean age was 34.74 with standard deviation=±7.7.Out of 200 respondents only 5 teachers were involved other than teaching and they were engaged in business, farming, higher study etc. Most of the respondents were post graduate [11] (58.5%), and 50(25%), 19(9.5%) and 14(7.0%) were graduate, HSC, SSC respectively. Most of the respondents were married 173(86.5%), unmarried 18(9.0%), widow 6(3.0%), divorced were 2 teachers and only 1 respondent was separated. The most number of the teachers were Muslims 192(96.0%), some teachers were Hindu and only 1 teacher was Buddhist. The family type of the respondents most of them were nuclear 140(70%) and rest 60(30%) were residing in joint family.The family size of the respondents, most frequency were 110(4-6 persons). The mean was 1.99, median =2.00, S.D=±0.802, minimum=1 and maximum=5 in number. The maximum respondents were residing in pacca houses, only few were living in semi pacca and rest only 3(1.5%) were residing in kaccha houses. Most of them were using supply water 122(61.0%), some respondents drank filter water and rest few 6(3%) were drinking from deep tube well water. Most of the respondents were using septic tank or sanitary type of latrine 198(99%) and 1 used pit latrine and another 1 used ring latrine. Out of 200 respondents all had the connection of electricity in their houses. The monthly family income of the respondents 110 were within (20001-50000) taka. Mean income were 52545.50,median were 40000.00,standard deviation ±73758.328, minimum income 10000 taka and maximum income were 1000000(10 lakh) taka. The type of workload of the teachers in the public primary school was extreme 75(37.5%) in comparison to another study according to high job demand, increased environmental exposures and overtime work has increased the stress level[11, 12].Most of the teachers 98(49.0%) devoting 5-6 hours in a day in school teaching followed by 96(48%) devoting 7-8 hours in a day in school work.

Maximum respondents 168(84.0%) devoting 5-6 days in a week in school job. Near about 75% respondents experienced 6 or more years had been in school job. Satisfaction level from students' behavior was medium 144(72.0%).Asking reason behind students absence in the class maximum respondents were positive 190(95.0%).Level of reaction was 170(85.5%) if the students adopted unfair means. Not better felt 145(72.5%) were responding when they were asked if the students did not show due respect to their teachers. Felt very much unwell 105(52.5%) when the students did not concentrate in study in classroom. Interpersonal factors were good 151(75.5%).Not better felt were answered 133(66.5%) when other teachers did not help in class maintenance as a class teacher10 Authority was the few causes 81(40.5%) respondents answered when they were asked authority was the main cause of their work and mental pressure. Little unsatisfied 126(63.0%) if there were inappropriate time for delivery teaching in class. Teachers complaint and became annoyed 170(85.0%) causes if there were no supporting class aid. Few felt 129(64.5%) if there were no healthful school environment. Teachers 116(58.0%) answered few problems arise if the authority did not arrange the supporting class aid. The satisfaction level in their job was moderate 120(60.0%). Most of the teachers 86(43.0%) felt mentally much dishonored if they did not recognize them as a government teacher. The top 5 stressors were "work load with a mean and Standard deviation of 3.2988 (±0.38314). This was followed by recognition in job with a mean and standard deviation of 2.5500 (±0.57808), time and resource scarcity 2.2263 (±0.44875), students misbehavior 2.1820 (±0.28012) and interpersonal relationship with a mean of 1.7083 (±0.44325). Samad NIA et al 10 in the Klang Valley, Malaysia was found students misbehavior was the leading cause of teachers mental stress with a mean of 2.62 (±0.78) followed by time and resource scarcity with a mean of 2.37 (±0.84), workload 2.32 (±0.98), interpersonal relationship 2.28(± 0.84), recognition 2.26(±0.83).

Conclusion

The study was conducted to assess the mental stress among teachers of selected public primary schools in Dhaka City. The study results show that out of 200 respondents near 88.0% were in medium level of stress and rest were in danger of high level of stress. The study revealed that stress relating to workload was high and this was followed by other stressors like recognition, time and resources scarcity, student's misbehavior and lastly interpersonal relationship respectively. The result of study also showed that every respondent was in the level of mental stress(no one in low or less stress according to level of total scores). There was no significant association between stress levels with gender, religion, family type of the teachers. Therefore, this study concluded that in public primary school, the main stressor was the' workload'.by other stressors like recognition, time and resources scarcity, student's misbehavior and lastly interpersonal relationship respectively. The result of study also showed that every respondent was in the level of mental stress (no one in low or less stress according to level of total scores). There was no significant association between stress levels with gender, marital status, educational level, religion, family type of the teachers. Therefore, this study concluded that in public primary school, the main stressor was the' workload'.

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Original Article

A comparison of outcome of CISC with continuous Foley's catheterization in the management of spinal cord injury patient.

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Abstract

Introduction: *Spinal cord injury patient mostly are not capable of walking, voiding and defecating voluntarily. The most troublesome situation they face is when they cannot feel when they void. As spinal cord injury is a permanent damage to the patient, they have to deal with such inconvenience quiet often and most painfully, the rest of theirlives. So, they have to come up with some methods of management.*

Objective: *To observe the complication and acceptancy of "Chronic indwelling catheterization" and "Clean intermittent self-catheterization (CISC)" among the spinal cord injury patient.*

Methods: *It was a prospective study conveyed over 30 spinal cord injury patients from center for rehabilitation of paralyzed (C.R.P) Savar who were on CISC and 25 patients from NITOR who were on indwelling catheterizationThestudy was conducted from September, 2004 to February, 2005.*

Result: *From total 55 patient there were total110 complications recorded of which 85 (77.17%) developed in patients on chronic indwelling catheterization and 25 (22.27%) in patients on CISC. And the acceptancy was 5 out of 25 (20%) in Chronic indwelling catheterization and 27 out of 30 (90%) in CSIC.*

Conclusion: *Clean intermittent self-catheterization (CISC) is the standard method of bladder management in spinal cord injury. It is cheap, convenient and well accepted by the patients.*

Key words: *spinal cord injury patients, catheterization, chronic indwelling catheterization, Clean intermittent self-catheterization.*

Introduction

Spinal cord injury patient loss their power of walking, voiding of urine and defecation. Often, they develop bedsore overflow dribbling and incontinence.They soil their garments. So the patients suffer from both severe physical and psychological trauma. If the patients are not managed properly spinal cord injury extends further. Spinal injury is one of the devastating injuries where price is paid by vesicourethral segment of the urinary tract resulting life threatening complications. Correct management of spinal injury may prevent such complications and even death related to renal failure.Different bladder management methods are now in use in spinal cord injurypatients; the most common among them are Clean intermittent self-catheterization (CISC) by a trained staff or self and Indwelling catheterization[1].The present study was conducted to make a comparison between these two commonly used bladder management methods.

Materials and methods

This isa prospective study. I have selected total 55 patients from center for rehabilitation of paralyzed (C.R.P) Savar and NITOR. Patients of any age suffering from spinal cord injury, Patients presenting with the symptoms of paraplegia due to spinal cord injury, Spinal cord injury patients on indwelling catheterization and Spinal cord injury patients on CISC. Each patient has been evaluated by proper

history taking, clinical examination and relevant investigations. At this stage, some patients were managed by indwelling catheterization and some were by CISC. I have selected 30 spinal cord injury patients from center for rehabilitation of paralyzed (C.R.P) Savar who were on CISC and 25 patients from NITOR who were on Chronic indwelling catheterization. To make a contrast in between these two group of patients, following things have been observed – color, odor and appearance of urine, temperature with chills and rigor, suprapubic pain, swollen painful and edematous testes and scrotum, loin pain, anorexia, nausea, vomiting, weakness and sexual dysfunction, hematuria and pyuria, catheter blockage, leakage and incontinence, sever pounding headache, mental abilities feeling of anxiety, agitation, apprehension and tightness in chest. The study was conducted from September 2004 to February 2005.

Result

The results are shown in Figure 1,2, 3 and 4 .

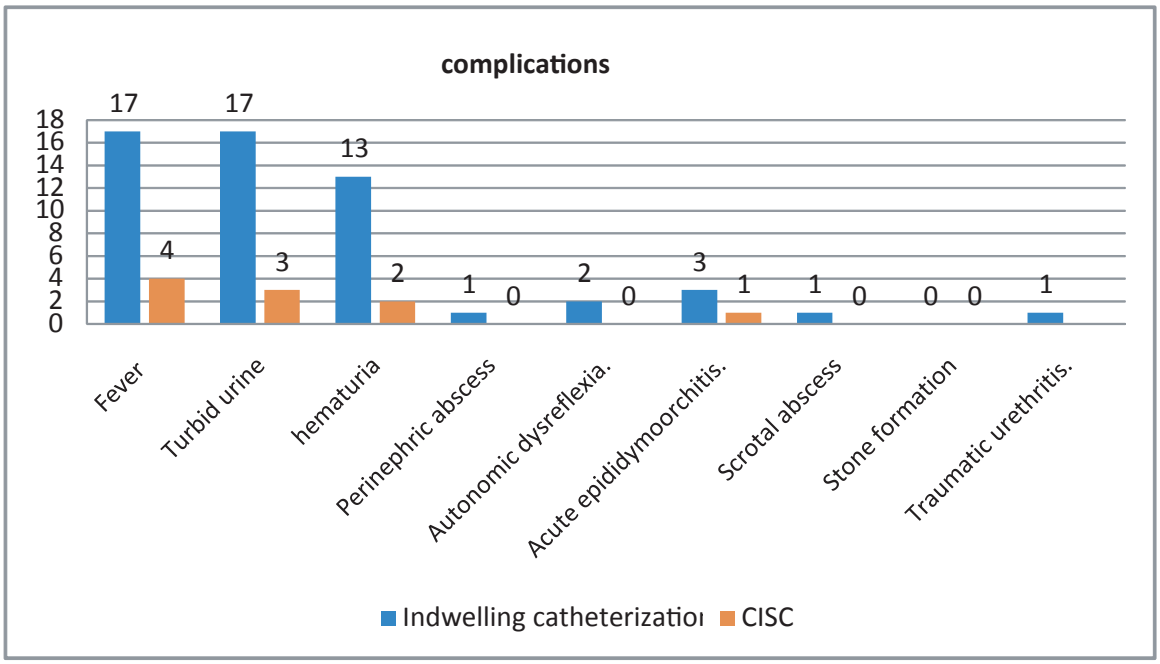

Figure 1: Different complications in different study groups

Numerical values indicates number of patients

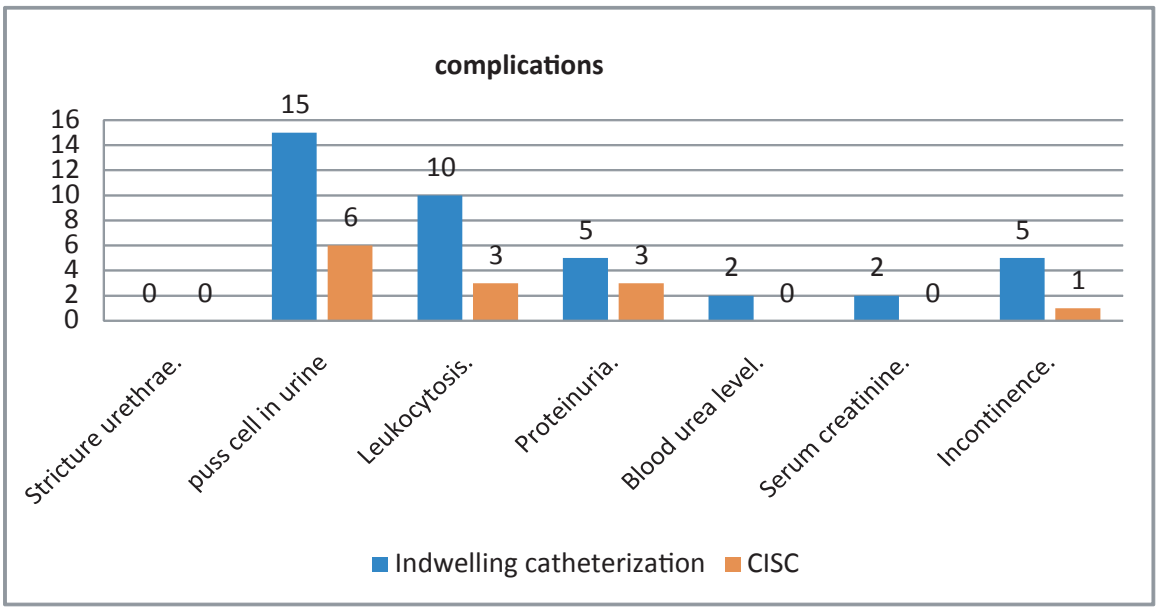

Figure 2: Different complications in different study groups

Numerical values indicates number of patients

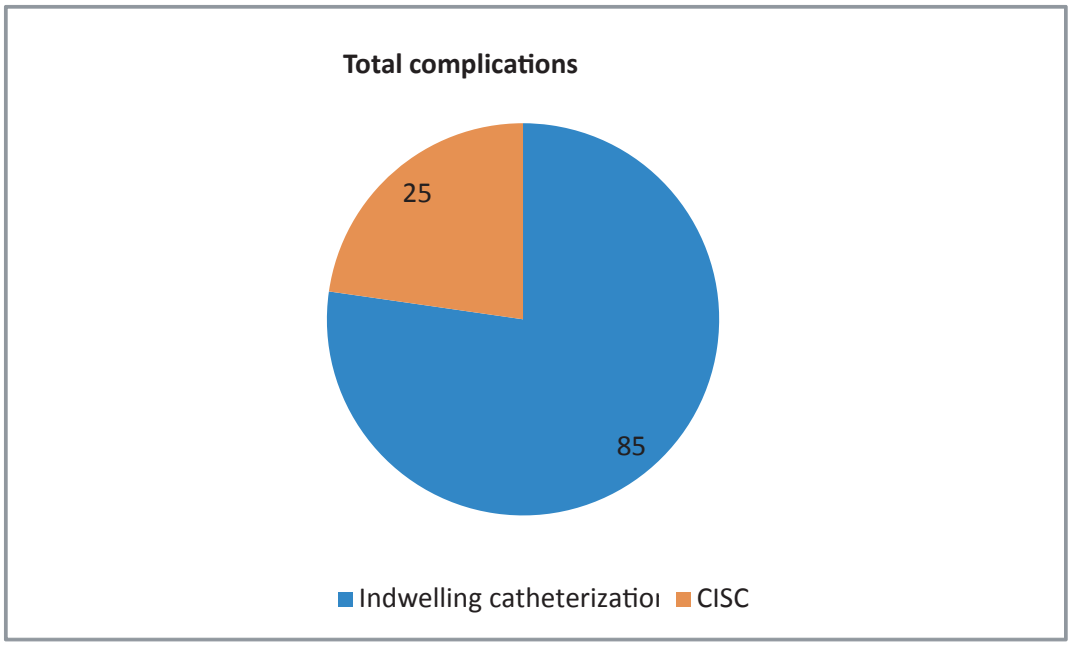

Figure 3 : Total complications in dif ferent study groups

Numerical values indicates number of patients

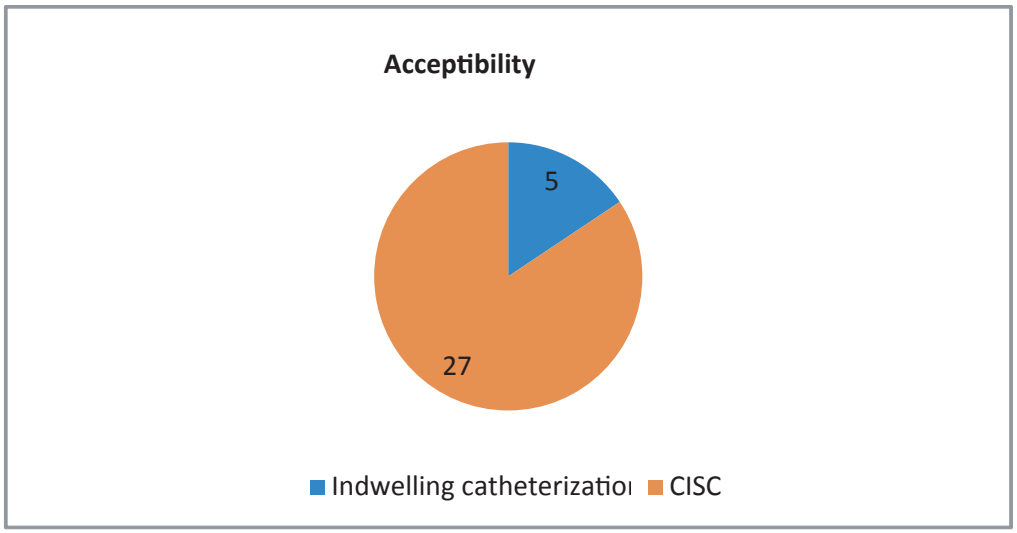

Figure 4 : Acceptability in different study groups

Discussion

Clean intermittent self-catheterization has been proved to be the most effective practical means of attaining a catheter free state in the majority of patients with acute spinal cord lesions. All of us should feel a great debt to Jack Lapides for promoting and popularizing CISC[2]. Lapides deserves enormous credit for first applying the concept of CISC to large groups of patients with voiding dysfunction. He and his co-workers demonstrated the long-term efficacy and safety of such a program and subsequently have many others and with time, bladder management with CIC has become more popular among spinal cord injury patient[3].

Indwelling urethral catheters are generally used for short term bladder drainage and careful use of a small-bore catheter for a short time, does not in our opinion and that of others, seem to adversely affect the ultimate outcome, at least insofar as this applies to initial bladder management in SCI[4]. For many years, there wasa need felt for suboptimal management for the patient with SCI. Despite high number of complications many spinal injuries services now regard the use of indwelling catheterization as being a reasonable management option[5-7]. More recently, Weld and Dmochowski (2000) report a retrospective review of 316 post traumatic SCI patients with a mean follow-up of 18.3 years. Bladder management methods included chronic urethral catheterization in 114 patients, CISC in 92. Spontaneous voiding in 74 and suprapubic catheterization in 36. Complications were recorded in term of infections (Epididymitis and pyelonephritis), renal and bladder calculi, urethral complications (stricture and periurethral abscess) and radiographic abnormalities (VUR and abnormal urographic findings). Overall there were 398 complications recorded of which 236 developed on chronic urethral catheterization, 48 on suprapubic catheterization, 57 on spontaneous voiding mand 57 on CISC. Separated bar graphs for each type of complication seem to confirm the overall superiority of CISC as the least problematic management.4In my study, among 55 SCI patients with a mean follow-up of 6 months, bladder management methods included chronic indwelling catheterization in 25 patients and CISC in 30 patients. Complications were reordered in terms of infection (urinary tract infection, epididymo-orchitis, scrotal abscess, perinephric abscess); biochemical (↑Blood urea, ↑Serum creatinine) and routine urine microscopic examination (Hematuria, puss cell, proteinuria). Overall there were 110 complications recorded of which 85 (77.17%) developed in patients on chronic indwelling catheterization and 25 (22.27%) in patients on CISC. In my study I have found that there was deterioration of renal function in 2 patients (8%) out of 25 in chronic indwelling catheterization but no patient in CISC.

Conclusion

As we can see reputation of indwelling catheterization is less. Not only because it is an old method due to unavailability of modern catheter materials at that time when it was invented, but also because of its hassles andcomplications on the other hand CISC is cheaper, convenient with less complications and well accepted by the patients. Thus, clean intermittent self-catheterization (CISC) is the standard method of bladder management in spinal cord injury. It eliminates residual urine, reduces frequent urinary tract infection, prevents ureteric reflex and chronic renal failure (CRF).

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Original Article

Variations of Volume of Thyroid Gland of Different Age & Sex in Bangladeshi Cadaver

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** For Correspondence*

Abstract

Background: *This cross sectional descriptive study was designed to find out the difference in volume of the thyroid gland to establish the difference between sexes of different age groups in Bangladeshi cadaver.*

Materials & Methods: *The study was carried out in the department of Anatomy, Mymensingh Medical College, Mymensingh from January 2014 to December 2014. A total 70 human thyroid gland were collected by purposive sampling from January 2014 to June 2014, among them 35 were male and 35 were female. The specimens were collected from Bangladeshi cadavers of age ranging from 10 years to 85 years, from autopsy laboratory of the Department of Forensic Medicine of Mymensingh Medical College. All the specimens were grouped into three categories Group A (upto 20 years), Group B (21 to 50 years) and Group C (>50 years) according to age. Dissection was performed according to standard autopsy techniques. The volume of thyroid glands were measured & recorded.*

Results: *The mean volume of the thyroid gland was (5.82 ± 4.39) ml in Group A, (6.21 ± 4.10) ml in Group B and (8.74± 5.67) ml in Group C. The mean volume of the thyroid gland in male was (5.56 ± 4.85) ml in Group A, (7.41 ± 5.33) ml in Group B and (9.89 ± 5.33) ml in Group C and in female was (6.13 ± 4.12) ml in Group A, (5.00 ± 1.77) ml in Group B and (7.70 ± 6.06) ml in Group C. In statistical analysis, differences between age groups were analyzed by using one way ANOVA test.*

Conclusions: *The present study will help to increase the information pool on the volume of thyroid gland of Bangladeshi people.*

Key words: *Thyroid gland, volume of thyroid gland, Age, Sex, Bangladeshi people*

Introduction

Thyroid gland is a highly vascular ductless gland, located in front and at the sides of trachea opposite 5th, 6th, 7th cervical and 1st thoracic vertebra [1]. The metabolism of virtually all nucleated cells of many tissues is controlled by the thyroid hormone [2]. The thyroid gland is an extremely liable gland varies in size & structure in response to a large number of factors, among which are sex, nutrition, temperature, age, season and the iodine content of the food, the latter being a great [3].

It is reported that the thyroid volume is higher in autumn and winter than in summer [4]. The function of the thyroid is to synthesize, store & release hormones concerned with regulation of metabolic rate, growth and development and body temperature [5]. A non-neoplastic and non-inflammatory enlargement of the thyroid gland except for menstruation and pregnancy is called goiter. It is endemic in Bangladesh [6]. There is a limitation of published work on

morphological variations of the thyroid of Bangladeshi people. We mainly depend on foreign text and literatures. However, we need our own standard baseline from which we can compare the morphological parameter like volume of thyroid gland of our own population. Having the above background and rationale in mind, the present study was under taken on postmortem thyroid gland.

Materials and Methods

The specimens including thyroid and parathyroid glands, tongue, parts of pharynx, esophagus, larynx, trachea, thymus, part of pericardium, great vessels of the neck, arch of the aorta and its branches, hyoid bone, part of right and left bronchus were collected from Bangladeshi cadavers of age ranging from 10 years to 85 years, from autopsy laboratory of the Department of Forensic Medicine of Mymensingh Medical College and all the collected specimens of cadavers were from medico-legal cases (unnatural death). Only fresh specimens from persons who died within the preceding 12 hours were chosen. Each specimen was duly tagged by a piece of waxed cloth which bore an identifying number representing individual serial number. Then the specimen was allowed to get fixed for 48-72 hours and preserved in 10% formol-saline solution. Ignoring a little hardening and shrinkage by fixation, the present study was carried out with these fixed specimens.

For convenience of differentiating the volume of thyroid gland in relation to age and sex, the collected specimens were divided into three groups: e.g. Group A (upto 20 years), Group B (21 to 50 years) & Group C (>50 years). Each group was again divided into male & female groups. The thyroid gland was separated from other structures of the specimen. Excess water or formol saline was soaked with blotting paper. Volume of the gland was measured by applying the principle of fluid displacement method 6 with the help of a graduated 400 ml beaker. The beaker was filled with water upto 250 ml and then the thyroid gland was placed into the beaker. Water raised more than 250 ml was measured, which was displaced by the thyroid gland represented the volume of the thyroid gland. The measurement was expressed in milliliter (ml). All data were recorded in the predesigned data sheet, analyzed by SPSS program and compared with the findings of other national and international studies and standard text books.

Figure 1: Photograph showing the measurement of volume of thyroid gland

Results

Table Ia shows that the maximum volume of the thyroid gland in Group A 18 ml, in Group B 20 ml and 22 ml in Group C. The minimum volume of thyroid gland were 2, 2 and 3 ml in Group A, B, C respectively. The mean volume of thyroid gland was maximum in Group C, 9.89 ml in male and 7 .70 ml in female and minimum in Group A, 5.56 ml in male and in group B 5 ml in female.

The mean volume of thyroid gland were 5.82± 4.39 ml in Group A, 6.21±4.10 ml in Group B, 8.74± 5.67 in Group C and it was also evident from figure-1 that the mean volume of the thyroid gland increased with age. Table Ib shows the mean difference of volume of thyroid gland between group A & B, group B & C and C & A was statistically insignificant.

Table Ia: Mean Volume of Thyroid Gland in Different Age Groups

Age Group	Number of specimens	Volume of thyroid in ml Mean ± SD (Minimum – Maximum)
A	17	5.82± 4.39 (2-18)
B	34	6.21± 4.10 (2-20)
C	19	8.74± 5.67 (3-22)

Table Ib: **Comparison of Volume of Thyroid Gland among the Age Groups**

Comparison between Variables		Mean Difference	Std. Error	p	Level of significance
A	B	0.36	1.26	0.78	Non Significant
B	C	2.56	1.37	0.07	Non Significant
C	A	2.91	1.71	0.09	Non Significant

Table II a : Mean Volume of Thyroid Gland in Different Sexes

Age Group	Sex of the person	Number of specimen	Mean volume in ml ± SD
A	Male	9	5.56± 4.85
	Female	8	6.13± 4.12
B	Male	17	7.41± 5.33
	Female	17	5.00± 1.77
C	Male	9	9.89± 5.33
	Female	10	7.70± 6.06

Table IIb: Comparison of Volume of Thyroid Glands between Sexes

Age group	Mean Difference between sex	Std. Error Difference	t	p	Level of significance
A	0.57	2.19	0.259	0.79	Non Significant
B	2.54	16.087	1.39	1.81	Non Significant
C	1.94	4.34	0.45	0.66	Non Significant

Table- IIa and figure-2 depicts that the mean (±SD) volume of thyroid gland were in male of Group A (5.56± 4.85), and Group B (7.41±5.33) and Group C (9.89± 5.33) and the mean volume of thyroid gland in female (6.13±4.12), (5±1.77), (7.70±6.06) in Group A, B, C respectively and statistically not significant. Table- IIb shows that comparison of volume of thyroid glands among sexes in Group A, B, C are statistically not significant.

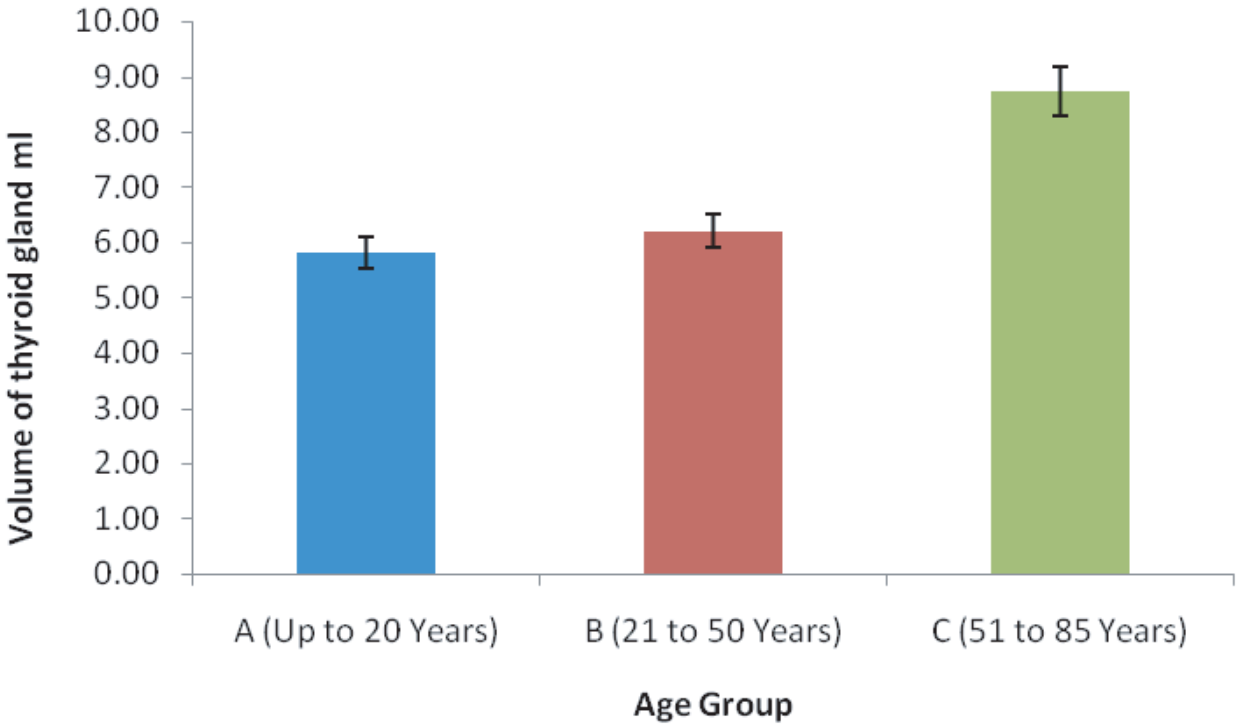

Figure 1: Bar diagram showing the volume of thyroid gland in different age groups

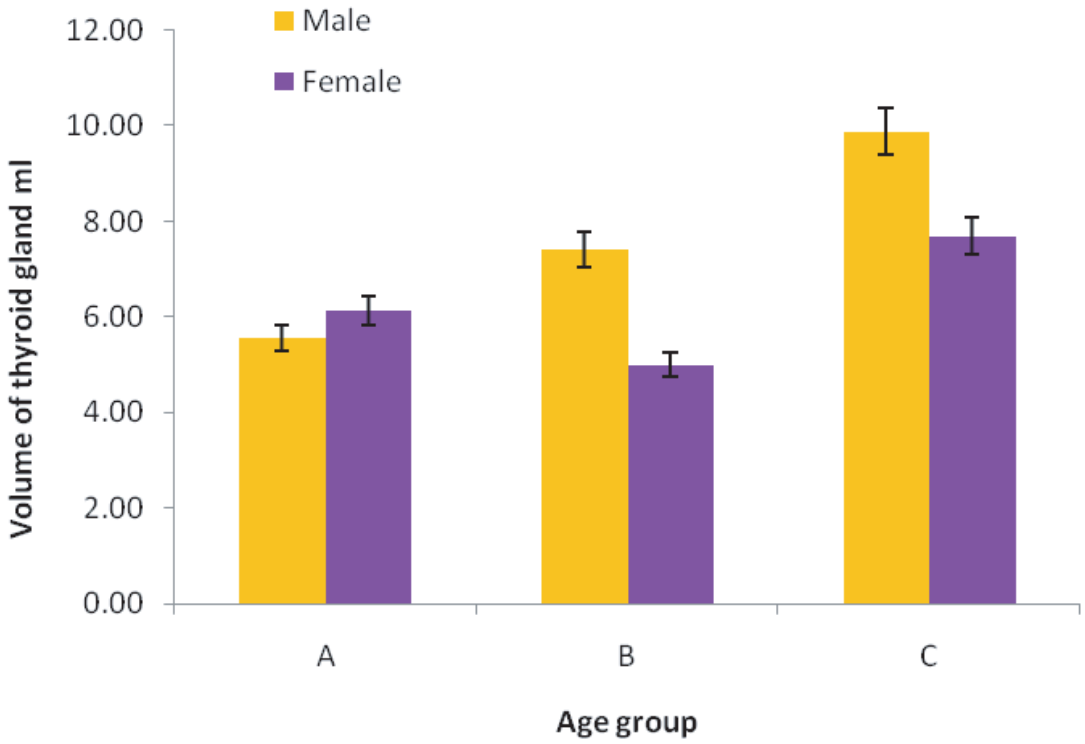

Figure 2: Bar diagram showing the volume of thyroid gland in different age & sex groups

Discussion

In present study the mean volume of thyroid gland was 5.82± 4.39 ml in Group A, 6.21± 4.10 ml in Group B and 8.74± 5.67 in Group C respectively. The maximum mean volume was in Group C (22 ml) and minimum was in Group A (2 ml).

From this study it was evident that the mean volume of thyroid gland increased with age.The maximum mean volume of thyroid gland was observed in group C, 9.89 ml in male and 7.70 ml in female and minimum in group A and 5.56 ml in male and in Group B 5 ml in female.

Hegedus [7] found that the mean volume of the thyroid gland was 18.6± 4.6 ml and mean volume in male 19.6± 4.7 ml and in female 17.5± 4.2 ml. Servet (2009) measured ultrasonically the mean total volume was 13± 6.27 ml (men; 15.87± 7.18 ml, women;10.94± 4.53 ml). Which were higher than the present study which was done on cadaver by water displacement theory.Chanoine et al.[8] estimated ultrasonographically the mean thyroid volume was 0.84± 0.38 ml. Which was lower than the present study.

Banna FAMH [9] observed that the mean volume of the thyroid gland was 11.62 ± 4.76 ml. Nurrunnabi ASM [10] found that the mean volume of thyroid gland were 16.92 ± 1.04 ml in Group A (10-20years), 21.62 ± 5.89 ml in Group B (21-50years), 15.85 ± 3.08 ml in Group C (> 50 years). Sultana SZ [11] observed that the mean volume of thyroid gland were 19.50 (± 5.56) ml, 22.27 (± 6.37) ml and 19.94 (± 5.63) ml in age Group A (upto 18 years), B (19 to 54 years) and C (>45 years) respectively. Which were higher than the present study. Begum M [12] found that the mean volume of the thyroid gland were 8.81 ± 3.10, 15.84 ± 4.92 and 13.25 ± 3.34 ml in age Group A (0-20 years), Group B (21-50 years) and Group C (>50 years), respectively. Which were nearly similar to the present study. The volume of thyroid gland described by the above mentioned authors was different, because the size and shape of the thyroid gland may alter remarkably with age, gender, physiological condition, race and geographical condition. Altered thyroid functions are associated with variation in thyroid volume.

Conclusion

In this study, the mean volume of thyroid was found maximum in group C (8.74 ml) and minimum in Group A (5.82 ml). It was also observed that the volume of thyroid were higher in male than female. The volume of thyroid gland was increased with age but there was no significant difference in between age groups and sex groups. The observations and results of the present study are expected to provide an idea about the volume of the thyroid gland and their changes in relation to age and sex of Bangladeshi people and these findings may help to standardize the measurements obtained by other observers in different country.

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