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Address :

Sapporo Dental College & Hospital

Plot # 24, Court Bari Road, Sector # 08, Uttara Model Town
Dhaka-1230, Cell : 01678026854, 01678026855, 01678026858
E-mail : sdch@bol-online.com, Web : www.sapporodentalcollege.com.bd

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5. Banerji MA, Faridi N, Atulri R, Chiken Rl, Lebovitz HE. Body composition, visceral fat, leptin and insulin resistance in Asian Indian men. J Clin Endocrinol Metab 1999; 84: 137-144 (Abstract)
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Journal of Contemporary Dental Sciences
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Editorial

We feel proud to share the much awaited good news: 'Journal of Contemporary Dental Sciences', the official publication of Sapporo Dental College, has formally been recognized by Bangladesh Medical and Dental Council (BM&DC). The announcement which was forwarded by BM&DC through Memo/4-D-2015 now recognizes all the publication of JCDS from its first issue (Journal of Contemporary Dental Sciences Vol.1, No.1, January 2013) till date and expresses its continuous support for our endeavor. This recognition means a lot to us as we feel that our hard work and sincerity has been recognized by the highest authority. We are grateful to the registrar Dr. Md. Z.H. Basunia and the journal recognition committee of BM&DC.

We congratulate and express our heartiest gratitude to our editorial committee members, all the contributors, well wishers and patrons who have constantly and continuously supported us and will continue in bringing out a high standard journal on contemporary dental and medical issues. With a heavy heart we also remember and pay tribute to Prof. M. U. Chowdhury, founding chief editor of JCDS, who is no longer with us to share this joyous moment. Without his dynamic leadership in the early days of the journal, today's achievement might have remained a distant reality.

This issue of JCDS (July 2015, Vol.3, No.2) contains an original article on renal function status in gestational diabetes mellitus by Dr. Selina Akhter and her team. The findings of the case-control study states reduced renal function and decreased glomerular filtration rate in case of gestational diabetes. The paper by SK Nath describes about quality of life among geriatric people living in different old homes of Dhaka. Another article by Mushfiqua Tabassum, a cross-sectional study, states about utilization of investigation facilities in OPD of a tertiary level hospital. She concluded with recommendations for possible directives on improvement from current conditions. Smokeless tobacco (SLT) use is a major health concern in our country. The prevalence and pattern of SLT use among female street vendors are described in a paper. A 5-year retrospective paper by MTH Chowdhury et al. audited the pattern of diseases diagnosed and managed at Sapporo Dental College and Hospital.

Apart from original papers, an interesting case report on Avulsed anterior teeth and review articles on lung involvement in Systemic Lupus Erythematosus (SLE) and Musculo-skeletal disorders (MSD) among dental practitioners have been included in this issue.

Professor (Dr.) Asad-Uz-Zaman BDS, DDS, PhD
Professor and Head, Department of Oral Pathology & Periodontology
Sapporo Dental College & Hospital
Chief Editor, Journal of Contemporary Dental Sciences.
Mailing Address: Plot-24, Courtbari Road, Sector-8,
Uttara Model town, Dhaka -1230, Bangladesh
Email: sdch@bol-online.com, asifkhan34@hotmail.com

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Contents

Renal Function Status in Gestational Diabetes Mellitus

MS Akhtar [1], R Begum [2], N Sultana [3], MS Sultana [4], N Yasmin [5]

Abstract

Purpose: *Gestational diabetes mellitus (GDM) is glucose intolerance of variable severity with onset or first recognition during pregnancy. The purpose of the study was to observe serum creatinine, serum urea & creatinine clearance rate in order to evaluate the renal function status in gestational diabetes mellitus.* ***Methods:*** *This cross- sectional study was carried out in the Department of Physiology, Dhaka Medical College, Dhaka during the period between July 2009 and June 2010 . Seventy women with gestational diabetes mellitus aged 25-40 years were selected for study group (group B). Age matched 35 apparently healthy pregnant women were studied as control (group A). Serum creatinine was estimated by alkaline picrate method, serum urea by Berthelot method & creatinine clearance rate were measured by Cockroft -Gault formula. Statistical analyses of data were done by unpaired students "t" test.* ***Results:*** *Mean serum creatinine, serum urea were significantly ($p<0.001$) higher in group B than those of group A & Creatinine clearance rate was significantly ($p<0.001$) lower in group B than those of group A.* ***Conclusion:*** *From the results of the present study it may be concluded that renal function may be reduced with decreased glomerular filtration rate in gestational diabetes mellitus.*

Key words: Serum creatinine, serum urea, creatinine clearance rate, Gestational diabetes mellitus. ***(J Cont Dent Sci 2015;3(2):1-3)***

Introduction

Diabetes mellitus (DM) is the metabolic disorder characterized by chronic hyperglycemia resulting from defects in insulin secretion, insulin action or both.[1] Lack of insulin affects the metabolism of carbohydrate, protein and fat. The chronic hyperglycemia in diabetes is associated with microvascular and macro vascular damage, dysfunction and failure of various organs, especially the eyes, kidneys, nerves, heart and blood vessels.[2]

Pregnancy brings about important changes in physical metabolic and endocrine functions of the mother. A number of circulating maternal and placental hormones e.g., HCG, estrogen, progesterone, cortisol, prolactin, placental growth hormone are increased many folds in adaptive fashion. All these changes exert great diabetogenic impact on mother.[3] Gestational Diabetes Mellitus (GDM) is degree of glucose intolerance of variable severity with onset or first recognition during pregnancy. The patients may have previous undiagnosed diabetes mellitus or may have developed diabetes coincidentally with pregnancy.[4] In a study among rural area of Bangladesh the prevalence rate of diabetes was 8.2%.[5] Women with GDM have an insulin resistance they cannot compensate with the increased production in the Beta-cells of the pancreas. Placental hormones and Cortisol are also seems to be mediate insulin resistance during pregnancy.[6] The prevalence of diabetes mellitus among women of child bearing age is gradually increasing and this may be due to sedentary lifestyle, dietary habit and obesity.[7] During normal pregnancy glomerular filtration rate (GFR) is higher than normal, as a result of increased GFR in pregnancy, concentration of serum urea, creatinine decrease below normal than non pregnant case.[8] Renal function test is assessed by measurement of serum creatinine, creatinine clearance rate.[9] Creatinine is a break down product of creatine which is an important component of muscle, is excreted exclusively by the kidneys. The creatinine production is proportional to muscle mass & varies little from day to day.[10] Serum creatinine level provides a more sensitive test of kidney function. Measurement of GFR is necessary to define the exact level of renal function. Serum creatinine clearance is the most widely used indirect measure of GFR.[11] Creatinine clearance rate determines how efficiently the kidneys are clearing creatinine from the body.

1. Dr. Mst. Salina Akhtar, Assistant Professor, Department of Physiology, Sapporo Dental College, Uttara, Dhaka.
2. Prof. Dr. Rokeya Begum, Head of the Department, Department of Physiology, Enam Medical College and Hospital, Savar, Dhaka.
3. Dr. Nasreen Sultana Lovely, Assistant Professor, Department of Physiology, Ad-Din Medical College, Moghbazar, Dhaka.
4. Dr. Most. Sabinus Sultana, Assistant Professor, Department of Physiology, HM Somrita Medical College, Dhaka.
5. Dr. Nilofar Yasmin Mili, Assistant Professor, Department of Physiology, Ad-Din Medical College, Moghbazar, Dhaka.

Address of Correspondence

Dr. Mst. Salina Akhtar, Assistant Professor, Department of Physiology, Sapporo Dental College, Uttara, Dhaka. Email: salina_akhtar@yahoo.com, Cell Phone: +880176410972

Many studies on renal function in gestational diabetes patients have been done in other countries. With the best of our knowledge no data is available in Bangladesh. Therefore, the present study was designed to asses the renal function status in gestational diabetes mellitus.

Materials and Methods

The present cross sectional study was carried out in the Department of Physiology, Dhaka Medical College, Dhaka, from July 2009 to June 2010. A total one hundred five (n=105) pregnant women age 25-40 years in second & third trimester participated. Group B (Study group) consisted of 70 women with diagnosed & documented gestational diabetes mellitus patients and Group A (control group) consisted of 35 healthy normal pregnant women. Gestational diabetes mellitus patients were selected from the Gynae and Obstetrics Department of BIRDEM and Dhaka medical college hospital. Gestational diabetes was diagnosed by fasting serum glucose >7.0 m mol/l. GDM subjects with history of diabetic ketoacidosis, hepatic failure and eclampsia were excluded from the study. Control subjects were selected from the Gynae out patient Department of Dhaka medical college. After selection, the purpose of the study was explained to all subjects and written informed consent was taken. With all aseptic preparation 5.0ml (five) of venous blood was collected from the antecubital vein. Serum was prepared and was sent to pathology laboratory of Dhaka medical college. Serum creatinine was estimated by alkaline picrate method, serum urea by Berthelot method & creatinine clearance rate was calculated by Cockroft – Gault Formula. Blood glucose of all subjects was measured by "glucose oxidase" method. The results were expressed as mean ±SD. For statistical analysis unpaired students t test and Pearson's correlation test were done.

Results

In Table-I mean ±SD age was almost similar but body weight was significantly higher in group B in comparison to that of group A (Table -I). In table-II the mean ±SD serum creatinine & serum urea level was higher but creatinine clearance rate was lower in group B than those of group A which was statistically significant (P<0.001).

Table 1: Shows Group A(Control) and Group B(Control gr., GDM)for age and body weight (n=105)

GroupA: Apparently healthy pregnant women. (Control), Group B: GDM patients

n=Number of subjects *** =<0.001

Table 2: Shows comparative analysis of serum creatinine, serum urea & creatinine clearance rate in GDM & control group (n=105)

Parameters	Groups	Mean(+ SD)	P value
Serum creatinine (mg/dl)	Control	0.85±0.16	0.001**
	Study	1.32±0.39	
Serum urea (mmol/l)	Control	3.38±0.97	0.001**
	Study	5.76±1.92	
Creatinine clearance rate (ml/min)	control	94.99±20.63	0.001**
	Study	71.39±23.57	

Group A: Apparently healthy pregnant women. (Control) Group B: (Control) GDM patients

n=Number of subjects *** p=<0.001

Discussion

The present study was undertaken to study the serum creatinine, serum urea and creatinine clearance rate in gestational diabetes mellitus and in normal pregnancy. In this study serum creatinine level was significantly higher in GDM patients than normal pregnant women. Creatinine clearance rate was lower in Group B (GDM) than Group A (Control).

These findings are consistent with findings of some investigators of different countries.[9,12-13] Sims and Krntz [14] suggested that during normal pregnancy renal blood flow were approximately higher than normal healthy woman. The glomerular filtration rate was increased throughout the pregnancy. As a result of increase in filtration rate the concentration of creatinine and urea in the plasma were reduced. A number of observations suggest that, secretion of a number

of hormones from placenta and adrenal gland is markedly increased during pregnancy which causes increase renal function during pregnancy. A study by Dathe[15] observed that, in women with GDM serum albumin was lower than in normal healthy pregnant woman but there was no difference in urinary creatinine. Albumin creatinine ratio was higher in woman with GDM.

Another study by Davison[16] observed that, in healthy pregnancy creatinine clearance is elevated within 6 weeks of conception. Kidney can regulate its own blood flow and GFR over a wide range of perfusion pressure. Due to narrowing of the renal arteries, the perfusion pressure falls. Prolonged under perfusion of the kidneys may lead to failure of these compensatory mechanism and as a result decrease GFR.

In the present study body weight in group B was significantly higher than group A. These findings were similar to other study. A recent study by Hedderson,[17] Bryson[18] suggested that, weight gain in early pregnancy is a modifiable risk factor for GDM. They said that, rapid weight gain early in the pregnancy leads to the "exhaustion" of the beta cell of the pancreas. This could reduce beta -cell capacity to secrete adequate levels of insulin to compensate for the insulin resistance induced by pregnancy & therefore leads to development of GDM. Sayeed[5] observed that obesity, family history higher income, and reduce physical activity are significant risk factors for development of diabetes in Bangladesh.

Conclusion

From this type of study, it may be concluded that patients with gestational diabetes mellitus had significantly higher serum creatinine, serum urea level & Glomerular filtration rate was decreased due to renal insufficiency. Therefore, alteration of renal function occurs in patients with gestational diabetes mellitus. Small sample size was an important limitation of the study. The sample was collected from two centers of capital city which does not represent the whole community. To make more conclusive results large sample size & long duration follow up study are recommended.

Acknowledgement

The authors of this article are thankful to the authority of Dhaka Medical College Hospital & Bangladesh Institute of research on Diabetes, Endocrine & Metabolism (BIRDEM) for granting permission for sample selection.

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Quality of life among geriatric people in old homes of Bangladesh

SK Nath[1], QT Ahmed[2], MTH Chowdhury[3]

Abstract

Purpose: *As life expectancy continues to rise, aging is a worldwide phenomenon and one of the greatest challenges for public health to improve the quality of life of aged people. The purpose of the cross sectional study was to assess the health related quality of life (HRQOL) of geriatric people (People aged 60 years or more) living in three selected old homes of Bangladesh.* ***Methods:*** *Eighty seven geriatric people in both sexes were interviewed with a structured questionnaire (SF-36, modified for non-western culture) which is a valid and reliable HRQOL instrument. Three dimensions HRQOL, the physical functioning, mental health and social functioning scores and overall HRQOL scores obtained by individual subjects were measured. The overall HRQOL was categorized into good, average and poor. The socio demographic factors of old home dwellers were also assessed to find out the reasons of placement to the old home.* ***Results:*** *The mean age of geriatric people was 71.30 ± 7.69 Years. The Mean HRQOL score obtained by geriatric people was 43.37± 13.21. Most of the respondents had average HRQOL. The mental health status was better than physical functioning and social functioning. Social functioning scores found very low in old home dwellers. Females were poor in HRQOL than male. With increasing HRQOL decreases both in males and females. The important determinant factors for HRQOL were age and marital status. Widowhood, nuclear family structure and bad behavior from the family members were the causes of placement to the old home.* ***Conclusion:*** *The study finding may help in future policy making and programme strategies for improving the HRQOL among the geriatric population.*

Key words: Health related quality of life (HRQOL), Geriatric people, Old homes ***(J Cont Dent Sci 2015;3(2):4-7)***

Introduction

The concept of Quality of Life (QOL) encompasses satisfaction and wellbeing, containing subjective and multi-dimensional chacteristics.[1,2] Quality of life can be addressed as a General Quality of Life or Health Related Quality of Life (HRQOL). The former is a broad-based term that includes the sense of wellbeing and happiness regardless of illness and dysfunctions.

As a result of declining fertility, mortality as well as improved public health interventions population aging has been a worldwide phenomenon. The ageing process is expected to accelerate in the near future, particularly in developing countries. The problem of population aging would be more severe in such countries as they have a shorter time to adapt to the changes associated with population ageing.[3] Geriatric population includes the persons who are 60 years and above. They are categorized into young old (60-75 years), old-old (76-85) and very old (> 85 years).[4] Elderly population contributed to 5% of total population in Bangladesh 2005 rise to 9% by 2025.[5] Millions of elderly are trapped in misery through a combination of low income and poor health. The traditional support structure of the family is increasingly unable to cope with the problem. Health related quality of life score reflects how physical and mental health affects a person's ability to function.[6]

Bangladesh is also in the phase of a rapid demographic transition. Life expectancy is increasing while birth rates are on the decline. The share of population above the age of 60 is growing at a rapid rate. Most of those who cross the age of 60 are expected to live till or beyond the age of 75.[7] As the population is ageing and at the same time joint families are breaking & the culture of old homes is developing in our country. This study has been carried out among geriatric people in 3 selected old homes to assess the HRQOL. The study mainly focused on physical functioning, mental health and social functioning of geriatric people.

Materials and Methods

A cross-sectional type of descriptive study was conducted among geriatric people aged 60 years and above living in 3 selected old homes in and around Dhaka city. The old homes were:

1. The Probin Hitoshi Kendra, Agargaon, Dhaka. 2. Boyosko Punorbashon Kendra (BOPUK), Gazipur. 3. The Belashesh Old Home, Mirpur. The study was carried out from 15th March to 15th June 2013.

1. Sujan Kanthi Nath, BDS, MPH, Lecturer of Dept. of Dental Public Health, Sapporo Dental College.
2. Qazi Tanzin Ahmed, BDS, MPH, Lecturer of Dept. of Dental Public Health, City Dental College.
3. Mohammad Tawfique Hossain Chowdhury, BDS,MSc,DDPH IRCS,Assoc Professor of Dept. of Dental Public Health, Sapporo Dental College.

Address of Correspondence

Dr. Sujan Kanthi Nath. BDS, MPH, Lecturer of Dept. of Dental Public Health, Sapporo Dental College. Email:knsujan@yahoo.com

Eighty-seven (n=87) samples were taken purposively during data collection period.Twenty-five samples were taken from Agargaon, 54 from Gazipur and 08 from Mirpur old home. Convenient sampling technique was followed for the selection of the respondents on the basis of agreement to give interview.

The research instrument was structured questionnaire. A preliminary version of questionnaire was developed in English. The questionnaire was translated into local language (Bangla). Data was collected by face to face interview with structured questionnaire. After collection of data, it was checked and verified. The data was then compiled and tabulated according to key variables. Then scoring was done on HRQOL questionnaire as standard scoring method.[3,5] Finally the data were analyzed by SPSS software (version-17.0). Both descriptive and analytical approaches were done in data analysis. To examine the association among scores of different scales of HRQOL with one another, Pearson correlation was done.

Results

Table-1 shows the distribution of respondents by age group. Among 87 geriatric people living in old homes, the highest number of respondents (37.9%), were in the age group of 66-70 years and the lowest number of responders (4.6%) were in the age group of >86 years. The mean age of geriatric people living in old homes was 71.30 years with SD of 7.69.

Table-2 shows mean scores of different scales and overall HRQOL. Among the 87 geriatric people living in old homes, the mean score of overall HRQOL was 43.37 (SD 13.21), physical functioning was 42.91 (SD 19.33), mental health was 55.93 (SD 17.02) and social functioning score was 19.15 (SD 17.93). The highest value goes for mental health and lowest value goes for social functioning. The table indicates that, geriatric people in old homes are better in mental health than physical functioning. In social functioning, their mean score was so poor which indicates less social activities done by old dwellers.

Table 1: Distribution of respondents by Age Group

Age group (in years)	Frequency	Percent
<65	23	26.4%
66-70	33	37.93%
71-75	12	13.8%
76-80	10	11.5%
81-85	5	5.7%
>86	4	4.6%
Total	**87**	**100%**

Mean ± SD= 71.30 ± 7.69 Year

Table 2: Mean scores of different scales and Overall HRQOL

Scales of HRQOL	Mean Score		Standard Deviation	
	Male	Female	Male	Female
Physical functioning	42.91	40.22	19.33	17.37
Mental health	55.93	54.61	17.02	18.15
Social functioning	19.15	15.57	17.93	14.79
Overall HRQOL	**43.37**	**36.80**	**13.21**	**12.34**

Table 3: Mean Overall HRQOL scores of the respondents by age and sex:

Age group (in years)	Overall HRQOL	
	Male	Female
<65	60.28	49.51
66-70	46.49	41.66
71-75	45.24	38.33
76-80	32.50	35.28
81-85	28.33	31.67
>86	37.50	15.00

Table-3 shows mean scores of HRQOL by age and sex. In all age groups, males scored better than femalesexcept 76-80 years of age group. In this age group mean score of males was 32.50 and mean score of females was 35.28. The difference in mean was higher in the age group of >86 year, where males scored 37.50 and females scored only 15.00. So males lead a better HRQOL than females in old homes.

Table 4: Mean Overall HRQOL scores of the respondents by age and sex:

Reason of placement to the old home					
Respondents Marital Status	Feeling empty nest syndrome	No one to take care	Bad behave from family	Others	Total
Married	4(4.6)	5(5.7)	13(14.9)	2(2.63)	24(27.6)
Widowed	9(10.3)	22(25.3)	25(28.7)	0(0)	56(64.4)
Divorced	2(2.3)	1(1.1)	3(3.4)	0(0)	6(6.9)
Never Married	0(0)	0(0)	0(0)	1(1.1)	1(1.1)
Total	**15(17.2)**	**28(32.1**	**41(47.0)**	**3(3.4)**	**87(100)**

Table-4 shows the association between respondent's marital status and reasons of placement to the old home. Highest numbers (14.9%) of the married people were placed to the old home due to bad behave from family. Highest numbers (28.7%) of widows were placed to the old homes.

Discussion

Majority of the respondents (37.9%) were in the age group of 66-70 year (Table 1). The lowest number of respondents (4.6%) were in the age group of >86 years. This was because of lower number of population survives at >86 years of age in context of Bangladesh. The average age of the respondents living in old homes is found to be 71.30 with deviation ±7.69 years. Mean age of Male = 72.41, and Female = 70.3 years. This correlates with 2 studies on old homes.[8,9]

About marital status, 64.4% were widows or widowers, 27.6% was married (currently spouse alive), 6.9% were divorced or separated and only 1.1% were never married.

An association was found between reason of placement to the old home and marital status (Table 4). Highest numbers (28.7%) of widows were placed to the old home due to bad behave from family and 25.3% were placed to the old home due to no one to take care. Highest numbers (14.9%) of married people were placed to the old home due to bad behave from family. Usually currently married should not come to the old homes but bad behave from their family forced them for coming to the old age home. This finding also correlates with Rahman et. al.[8]

According to mean scores obtained by the elderly people, the mean scores of overall HRQOL was 43.37 (SD 13.21), Physical functioning 42.91 (SD 19.33), mental health 55.93 (SD 17.0) and social functioning score was 19.15 (SD 17.93) (Table 2). The highest value goes for mental health and the lowest value goes for social functioning. This indicates that, geriatric people in old homes are better in mental health than physical functioning. In social functioning, their mean score was so poor which indicates less social activities done by old home dwellers. This does not correlate with other studies done in general population (Burros MBA).[9]

Overall HRQOL score of females are lower than male (Table 3). In males the highest mean score was in mental health (55.93±17.02) and lowest in social functioning (19.15±17.93). In females the highest score was in mental health (54.61±18.15), and lowest in social functioning (15.57±14.79). This finding correlates with another study.[10] With increasing age, the mean score of all the dimensions were decreases except the social functioning score. There was no association between age group and social functioning score. The mean physical functioning score was (5942±17.09) in the age group of <65 years and less (18.75±7.97) in the >86 years group. As similar on a study done by Ahmed et. al.[11]

Conclusion

Among 87 geriatric people in 3 selected old homes, females predominate over males. Most of the respondents were in the age group of 66-70 years and majority of respondents were literate. Most of the respondents were widow or widowers. Most of them were placed to the old home because of bad behavefrom family members. The majority of respondents had nuclear family, a few number had independent income and highest number of respondents were from town. Only a few respondents were living with spouse at old home. The highest number of the respondents were living for less than two years and most of the respondents currently had only one child. Maximum respondents possess an average Health Related Quality of Life.**Table 4:** Mean Overall HRQOL scores of the respondents by age and sex:

The female lead with poorer HRQOL than male. With increasing age, HRQOL decreases in both sexes. In case of different scales of HRQOL old home residents are better in mental health status; they are not so good in physical functioning and poor in social functioning.

Recommendations

From the findings of study, some points of recommendation are put forward to improve the quality of life of geriatric people living in old homes and to eliminate the un-wanted causes for sending the elderly people in old home in Bangladesh.

1. Health care services should be ensured properly for the geriatric people in old home to improve the HRQOL.
2. Health education programmes should be organized from time to time in old home to increase knowledge about common problems of elderly.
3. Exercise facilities should be increased for geriatric people in old homes to improve physical functioning.
4. More old homes should be established by Government and NGOs with free medical care, health care, library, recreation, indoor games, and other residential facilities.
5. Behavior with elderly people should be changed by their family members who may reduce the number of geriatric people to be placed to the old homes.

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Utilization of Investigation facilities in Clinical Pathology and Radiology Out-Patient Departments (OPD) in a Tertiary-level Hospital

M Tabassum[1]

Purpose: *Health laboratory services play vital role providing information for diagnostic purposes, determining the severity of a disease and monitoring its progress as well as the effect of therapy. The present study was undertaken to assess the utilization of medical investigation facilities provided by a Tertiary level hospital in Dhaka city within its specific frame work.* **Methods:** *A descriptive type of cross sectional study was carried out in Sir Salimullah Medical College Hospital (SSMCH), Dhaka from April 2009 to March 2010. The laboratory and radiology investigations were done for all admitted patients, outdoor patients and patients in emergency department of hospital and the physical condition of clinical pathology and radiology departments, their staffs of those two departments were all taken as study samples. Only the OPD findings are discussed in detail in this paper.* **Results:** *Among OPD patients the rate of laboratory investigation (both in clinical pathological and radiological) in SSMCH was 70.62%. In categorical distribution of investigation showed that out of 65,975 patients, 9.99% were advised for Blood for routine examination; Stool for R/E, 3.72% Urine for R/E 6.30%, Blood sugar 9.92%. Blood urea 2.80% , Serum electrolytes 3.86%, Liver function test 2.64% , Uric acid 2.86% , Serum billirubin 2.22%, Serum creatinine 2.65%, Lipid profile 3.88%, Serum calcium 2.50%, Serum alkaline phosphatase 2.34% and X-ray 14.92% were recorded respectively. Seventy-one percent (71 %) of doctors in SSMCH gave their opinion in favor of necessary of investigation of OPD patients and Seventy-six percent (76%) doctors said that quality of lab test and imaging is satisfactory, and 24% said not satisfactory. The study also found that there was lack of expert in clinical pathology department. Shortage of technologists was evident in radiology department.* **Conclusion:** *The study reveals that laboratory investigation facility was not properly arranged at SSMC. Major factor for this under achievements were less supply of reagent or x-ray films, lack of MRI machine, shortage of technologist in relation to enormous number of patients, lack of space for clinical investigations, lack of sitting arrangements for the huge amount of patients and lack of queue management time for the patients.*

Key words: Clinical Pathology, Radiology, Laboratory services, SSMC ***(J Cont Dent Sci 2015;3(2):8-12)***

Introduction

Medical laboratory services have a useful role to play in health care programs of developing countries. Historically, laboratory services played a vital role in the development of modern medical practice and socially they are widely held in high regard as symbol of the application of scientific principles in medicine.[1] Health laboratory services play vital role apart from the management of patients as any other branch of medicine, providing information for diagnostic purposes, determining the severity of a disease and monitoring its progress as well as the effect of therapy etc. Obviously, laboratory is essential part of hospitals.[1,2] Programme for better medical and surgical care frequently depends on the availability of prompt, thorough and skillful diagnostic services. Among the many modern diagnostic techniques, x-ray examinations play a vital facilitating effective medication and treatment.[3-5]

The present study was undertaken to assess the utilization of medical investigation facilities provided by a Tertiary level hospital in Dhaka city within its specific frame work.The main objective of the study was to find out the availability and the utilization of medical investigation facilities in clinical pathology and radiology departments of a medical facility. As Bangladesh is a developing country, where the resources far less than adequate, assessing the utilization of investigation facilities is tremendously important and thus to undertake this type of study was justified.[6]

Materials and Methods

A descriptive type of cross sectional study was carried out in Sir Salimullah Medical College Hospital (SSMCH), Dhaka. All the laboratory and radiology investigation were done in SSMCH from the period of April 2009 to March 2010 for all admitted patients, outdoor patients and patients in emergency department of hospital and the physical condition of clinical pathology and radiology departments, their staffs of those two departments were all taken as study samples. Only the OPD findings are discussed in detail in this paper.

A self administered interview questionnaire and a check list were the research instrument. The questionnaire was constructed to minimize the time spent and make the process of data collection easier. After pretesting and necessary correction structured questionnaire was developed. There were both open ended and close ended type of questions.

1. Mushfiqua Tabassum, BDS, MPH (NIPSOM), Dental Surgeon and Ex-Lecturer SDCH.

Address of Correspondence

Dr. Mushfiqua Tabassum, 24 Courrtbari Road, Sector-8, Uttara, Dhaka: sdch@bol-online.com

At the beginning of data collection, permission from concerned authorities of the SSMCH was taken. The hospital records were reviewed for the period of March 2009 to April 2010 for all patients admitted, outdoor and emergency department in the previously defined period. Number of patients, number of type of investigation done was also recorded. Actual position of laboratory and x-ray equipments and reagents were verified using a checklist. The physical condition of Clinical pathology department and Radiology department were verified using checklist and by close observation.

After the completion of data collection, they were checked, verified and analyzed for consistency before tabulation. Descriptive and statistical methods were used in analyzing the data. The important variables were considered and analyzed to fulfill the objectives of the study. To examine the association Fisher's Exact tests were done. The results were calculated from the tabulated column.

Results

Table 1: Distribution of patient attending in SSMCH Dhaka

Month	Total	OPD	%	Indoor	%	Emergency	%
Apr-09	14,845	6,895	46.45	6,770	45.60	2,250	15.16
May-09	14,264	6,345	44.48	5,279	37.01	2,640	18.51
Jun-09	14,344	6,054	42.21	5,680	39.60	2,610	18.2
Jul-09	14,698	6,481	44.09	5,647	38.42	2,570	17.49
Aug-09	13,568	6,245	46.03	5,023	37.02	2,300	16.95
Sep-09	13,458	5,234	38.89	5,899	43.83	2,325	17.28
Oct-09	13,986	5,206	37.22	5,700	40.76	2,010	14.37
Nov-09	12,453	4,322	34.71	4,810	38.63	2,230	17.91
Dec-09	11,592	4,335	31.68	4,458	34.29	2,580	22.26
Jan-10	13,689	4,225	36.45	4,885	35.69	2,400	17.53
Feb-10	13,525	5,320	39.33	5,385	39.82	2,820	20.85
Mar-10	13,001	5,312	40.86	4,787	36.82	2,700	20.77
Total	**163,423**	**65,974**	**40.37**	**36,017**	**22.04**	**27,185**	**16.63**

Table 1 shows, total 163,423 patients attended during data collection period (from April 2009 to March 2010) in OPD, IPD and emergency. Among them 40.37% patients received OPD service, 22.04% patients received IPD and 16.63% patients received emergency service. Total 79.04% patients received investigations facilities from clinical pathology and radiology departments.

Table 2: Categorical Distribution of Investigations done through OPD

Category of Investigation	Patient Attended	Investigation	%
Blood CBC	65,975	6,589	9.99
Stool R/E	65,975	2,451	3.72
Urine R/E	65,975	4,159	6.30
Blood sugar	65,975	6,547	9.92
Blood urea	65,975	1,846	2.80
Serum electrolyte	65,975	2,546	3.86
Liver function test	65,975	1,745	2.64
Uric acid	65,975	1,889	2.86
Serum billirubin	65,975	1,466	2.22
Serum creatinine	65,975	1,748	2.65
Lipid profile	65,975	2,561	3.88
Serum calcium	65,975	1,651	2.50
Serum alkaline phosphatase	65,975	1,546	2.34
X-ray	65,975	9,845	14.92
Total	**65,975**	**46,589**	**70.62**

Table 2 shows, in OPD, out of 65975 patients 9.99% were advised for Blood for routine examination, Stool for R/E is 3.72% ,Urine for R/E is 6.30%, Blood sugar is 9.92%, Blood urea is 2.80%, Serum electrolytes 3.86% ,Liver function test is 2.64%, Uric acid is 2.86% ,Serum billirubin is 2.22% ,Serum creatinine is 2.65%, Lipid profile is 3.88% ,Serum calcium is 2.50%, Serum alkaline phosphatase is 2.34%, and X-ray is 14.92% .Total 70.62% patients were investigate from OPD.

Table 3: Doctor's opinion about the necessity of investigation of every OPD patient

Routine investigation of every OPD	Frequency	Percentage
Necessary	12	70.59
Not Necessary	5	29.41
Total	**17**	**100**

Table 4: Doctor's opinion about the supply of reagent/x-ray film

Investigation facilities	Frequency	Percentage
Sufficient	2	12
Insufficient	15	88
Total	17	100

Table 5: Doctor's opinion about the quality of lab-test/imaging

Laboratory test	Frequency	Percentage
Satisfactory	13	76
Not satisfactory	4	24
Total	17	100

Table 6: Doctor's opinion about the performance of lab technician

Laboratory test	Frequency	Percentage
Efficient	10	77
Inefficient	3	23
Total	13	100

Table 7: Relationship between length of service and efficiency of technologists

		Doctors' Opinion		Total
		Inefficient	efficient	
Length of Service	1-10years	3	0	3
	11-20years	0	8	8
	>21years	0	2	2
Total		3	10	13

Table 7 shows the association between length of service of the technologist and efficiency (according to doctors opinion). majority of the technologist had service length between11-20 years,Fisher's exact test is significant, so there is an association between efficiency and length of service of the technologist. ($p=<0.05$)

Table 8: Compliance rate, (according to SOP) in OPD, IPD Emergency, and in House keeping

Sl.	Question/observation	SOP score
1	Is the level of cleanliness satisfactory?	76-90%
2	Is the furniture and equipments arranged well?	50-76%
3	Does patient wait less than 10 minutes in emergency department?	<50%
4	Are necessary investigation done in emergency department?	76-90%
5	Are urgent investigation done with in 1 hour ?	76-90%
6	Whether maintained patients discipline (Queue) in OPD?	<50%
7	Whether sitting arrangement is adequate for the patients ?	<50%
8	Whether the space is enough for investigation?	<50%
9	Whether supply of safe water adequate?	50-70%
10	Whether satisfactory toilet facilities?	50-70%
11	Whether routine investigation report ensured with in 24 hrs?	50-70%
12	Whether routine cleaning of the floor?	76-90%
13	Whether dusting of wall, roof?	76-90%
14	Whether dusting the furniture?	76-90%
15	Whether cleaning bathroom and toilet?	76-90%
16	Are waste paper basket and sputum box available?	76-90%
17	Whether maintenance of waste basket and spitting box?	50-70%
18	Whether disposal of solid waste?	91-100%
19	Whether disposal of liquid waste?	91-100%

Table-8 shows according to SOP compliance rate, that quality of service in disposal of solid and liquid waste was 91-100%, which is excellent and maintenance of patients queue, sitting arrangement of patients and Space for investigation according to SOP compliance rate was <50%, which is bad.

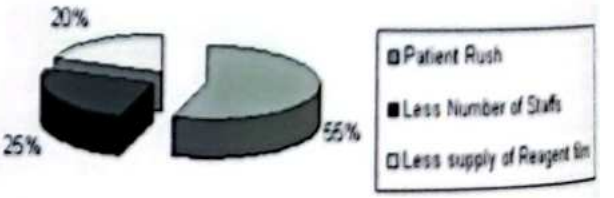

Figure 1: Doctors opinion for not conducting investigations in all OPD patients

The above figure shows opinion of doctors for not conducting investigations of all OPD patients are. Patients rush (55%), less number of staffs (25%), less supply of reagent or x-ray films (20%)

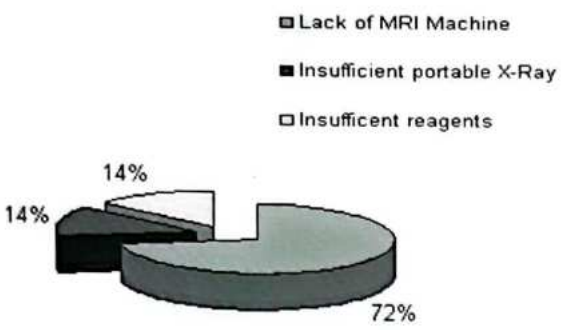

Figure 2: Doctors' opinion on insufficiency of investigation facilities

The above figure shows opinion for insufficiency of investigation facilities are due to lack of MRI machine (45%), insufficiency of portable x-ray machine (15%), insufficiency of reagents for serum electrolyte (40%).

Discussion

Among OPD patients the rate of laboratory investigation (both in clinical pathological and radiological) in SSMCH was 70.62%, According to the circular of DGHS, it is 30% for OPD patients. Here SSMCH have achieved lot more than the target because of the huge number of various types of patients attending in the OPD of SSMCH and they need proper investigations for various diseases.[1]

The study showed that the highest number of patient attending in the month of in the month of April was (46.45%) in OPD and (45.60%) in IPD. The lowest number in the month of December was 4,335 (31.68%) in OPD and 4,458 (34.29%) in IPD. The study report is more or less similar to the study of Bangladesh Bureau of statistics which showed that the lowest patient attendance is in the month of December (Table- 1).[7]

In categorical distribution of investigation showed that out of 65,975 patients 9.99% were advised for Blood for routine examination, Stool for R/E is 3.72% Urine for R/E is 6.30%, Blood sugar is 9.92% Blood, urea is 2.80% Serum electrolytes 3.86%, Liver function test is 2.64% Uric acid is 2.86% Serum billirubin is 2.22%, Serum creatinine 2.65%, Lipid profile is 3.88%, Serum calcium is 2.50%, Serum alkaline phosphatase is 2.34% and X-ray is 14.92% . (Table 2)

Seventy-One (71 %) of doctors in SSMCH gave their opinion in favor of necessary of investigation of OPD patients and 29% gave their opinion for not necessary of investigations. (Table 5). Eighty-eight percent (88 %) doctors say against the supply of reagent and the regular supply of x-ray film and rest of the doctors (12%) in favor of sufficient and regular supply of reagents and films. (Table-7)

Seventy-six percent (76%) doctors said that quality of lab test and imaging is satisfactory, and 24% said not satisfactory (Table 8).The insufficiency in performance of the technician may interrupt the investigation service.[8]

Same situation exist in radiology department. Huge patients had to wait for long time without having proper sitting arrangements. About the efficiency of lab technician 77% doctors said they are efficient and 23 % said they are not efficient (Table 9). During analysis, The Fisher's exact test reveals an association between efficiency and the length of the service of the technologist ($P<<0.05$) (Table 7).

In clinical pathology department the space for investigation is not adequate. Different types of investigation is carried out in a small room .There is huge number of patients waiting for the investigation but there are not enough sitting arrangement for them. Maintenance of patients queue is not proper. (Table-8)

Though SSMCH already have achieved lots more than the target given by the DGHS,most frequent opinion of doctors for not conducting investigations of all OPD patients are, Patients rush (55%),less number of staffs(25%)less supply of reagent or x-ray films (20%).(Figure-2)

Most Frequent opinion for insufficiency of investigation facilities were due to lack of MRI machine (45%)(SSMCH have one MRI machine but that is out of order for long period.),insufficiency of portable x-ray machine(15%),insufficiency of reagents for serum electrolyte(40%). (Figure-2)This opinion was similar to a WHO study report.[9]

During the study it was also found that there was lack of expert in clinical pathology department (They said they need at least one hematologist or biochemist), and there were only 7 technologist. They said they need at least 10 technologists for huge number of patients. Shortage of technologist was also there in radiology department.

Supervision of clinical pathology and Radiology department was very good. Director of SSMCH supervise regularly, twice a month and almost every other day Deputy Director supervise these two department as per order of DD (MPDC).[10]

Conclusion

Investigation units play a vital role in the managements of the patients. Proper diagnosis is essential for proper treatment. Otherwise treatment becomes wastage of time and money. This study reveals that that laboratory investigation facility was not properly arranged at SSMC. Major factor for this under achievements were less supply of reagent or x-ray films, lack of MRI machine, shortage of technologist in relation to enormous number of patients, lack of space for clinical investigations, lack of sitting arrangements for the huge amount of patients and lack of queue management time for the patients.

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Pattern of Dental diseases diagnosed and managed at Sapporo Dental College and Hospital-A five year retrospective audit

MTH Chowdhury[1], SK Nath[2], AE Noor[3], A Alam[4], CP Poddar[5], AU Zaman[6]

Abstract

Purpose: *The purpose of the study was to identify the patterns of oral and dental diseases and treatment needed among patients attending the OPD and indoors of Sapporo Dental College and Hospital (SDCH).* ***Methods:*** *Five years retrospective data from 2009 to 2014 were collected from the hospital records from all the OPD and indoors of clinical dental departments. Data were presented in tabular and graphical pattern.* ***Results:*** *Most of the patients visited with Dental caries, chronic gingivitis, cyst, benign tumour, retain deciduous teeth, class II malocclusion, missing teeth and squamous cell carcinoma. Different teeth restoration, endodontic treatment, teeth extraction, full veneer crown, removable prosthodontics and orthodontic appliances were the most common treatment approach in SDCH. A persistent rise of patients in OPD had been observed in last 5 years.* ***Conclusion:*** *Dental caries was prevalent among this population and strong inclination towards preserving the teeth was found in treatment planning. A comprehensive and systematic patient data recording system should be developed in SDCH.*

Key words: Dental diseases, OPD, Indoor, Sapporo Dental College, Dental treatment ***(J Cont Dent Sci 2015;3(2):13-18)***

Introduction

The unique characteristics of the dental diseases are that they are universally prevalent and do not undergo remission or termination if untreated and require technically demanding expertise and time consuming professional treatment. The rapidly changing disease patterns throughout the world are particularly linked to changing lifestyles, which include diets rich in sugar, widespread use of tobacco and increased consumption of alcohol. In addition to socio-environmental conditions, oral health is highly related to the aforementioned lifestyle factors, which are also common risks to most chronic diseases.[1]

Oral diseases qualify as major public health problems due to their high prevalence and incidence in all regions of the world and as for all diseases the greatest burden of oral diseases is on the disadvantaged and socially marginalized populations.The severe impact in terms of pain and suffering, impairment of function and their effect on quality of life must also be considered. Worldwide, 60-90% of school children and nearly 100% of adults have dental cavities, often leading to pain and discomfort. Severe periodontal (gum) disease, which may result in tooth loss, is found in 15-20% of middle-aged (35-44 years) adults. Globally, about 30% of people aged 65-74 have no natural teeth.1 Oral diseases such as dental caries, periodontal diseases, tooth loss and oral cancer have emerged as a major public health problem in the Member countries of the South-East Asia (SEA) Region of WHO.[2] In Bangladesh, some sporadic studies on oral health identified high caries prevalence with DMFT ranging from 1.0 to 4.7 among both urban and rural population in Bangladesh.[3,4] On the other hand, high prevalence of calculus, bleeding on probing and deep periodontal pockets was identified in central and western Bangladesh.[4]

Another study among Tongi slum dwellers near Sapporo Dental College and Hospital (SDCH) revealed that prevalence of dental caries was quite high with mean DMFT of 3.01. Moreover, high prevalence of gingivitis and abundant plaque accumulation was also observed among this population.[5]

Traditional treatment of oral diseases is extremely costly in several industrialized countries and not feasible or possible to most low-income and middle income countries. Bangladesh exposes disparities in oral health, with lower income groups having higher disease rates, limited access to care.

1. Mohammad Tawfique Hossain Chowdhury, Associate Professor and Head, Department of Dental Public Health, Sapporo Dental College and Hospital.
2. Sujan Kanti Nath, Senior Lecturer, Department of Dental Public Health, Sapporo Dental College and Hospital.
3. Ashek Elahi Noor, Lecturer, Department of Dental Public Health, Sapporo Dental College and Hospital.
4. Arefin Alam, Lecturer, Department of Conservative Dentistry and Endodontics.
5. Clopa Pina Poddar, Lecturer, Department of Dental Public Health, Sapporo Dental College and Hospital.
6. Asad-Uz-Zaman, Professor and Head, Department of Oral Pathology and Periodontology, Sapporo Dental College and Hospital.

Address of Correspondence

Mohammad Tawfique Hossain Chowdhury, Associate Professor and Head, Department of Dental Public Health, Sapporo Dental College and Hospital.

In Bangladesh, the dental health services are provided by government dental college hospital, dental units of medical colleges hospitals, medical colleges, district hospitals, some of the upazilla health complexes, private dental college hospitals, dental units of private medical college hospitals and private dental clinics.[6] In comparison with the urban areas, the safe and quality dental treatment facilities are not available yet in rural areas.

As a tertiary Dental Health Service provider of the country, Sapporo Dental College Hospital has been providing quality treatments of oral, dental and maxillofacial diseases and dysfunctions since 2003 by OPD and indoor services. There are 8 clinical departments, having separate OPDs and one indoor surgical department. SDCH provides quality treatments at a minimum or affordable treatment cost for the low income to middle class and as well as higher class population of Uttara Model town, Dhaka, Bangladesh.[7] Each Patient assigned with unique registration numbers. Patients' particular, Chief complains, Diagnosis, Treatment Plans, Treatment records are documented carefully in separate logbooks of individual Departments, which is preserved centrally in hospital office subsequently. The data, preserved from January 2009 to December 2014 in Hospital Administrative office were used for this study.

The objective of this study was to identify the patterns of oral, dental and maxillofacial diseases and dysfunction conditions among patients attending the OPD and indoor of SDCH and the treatment needed by these patients, which would provide valuable information to develop strategy plan, mobilize resources and arrange facilities for proper preventive, curative and treatment procedures in future, therefore, to enable SDCH enhancing its clinical care and encompass the educational and research works.

Materials and Methods

Retrospective data were collected from the hospital record of both indoor and Outpatient department of different clinical departments of Dentistry for the last 5 years (January 2009- December 2014). Clinical departments were OPD of Conservative dentistry and endodontics, Pediatric dentistry, Oral and Maxillofacial surgery, Prosthodontics, Orthodontics, Periodontology and Oral Pathology department and indoors of Oral and Maxillofacial surgery. Data were collated, summarized and presented in graphical and tabulated form. Both the pattern of cases diagnosed and modalities of treatment provided were categorized according to individual department. Overall trends of patients visiting per day or months were also reported from 2009 to 2014. All the entries in the hospital record including both old and new patients were included in the data.

According to the OPD organogram of SDCH, patients were mainly managed by a trained group of Dental surgeons and interns, under the guidance and supervision of senior faculties including Professors, Associate and Assistant Professors, Lectures and Medical officers. In indoor of Oral and Maxillofacial surgery department, treatment mainly provided by well-trained surgery team leaded by Professor, Associate or Assistant Professor. A Hospital Director administratively manages whole hospital.

Results

Majority of the patients attended in the Department of Conservative Dentistry and Endodontics with Dental caries (37%) and complications associated with untreated dental caries like pulpitis (25%) (Fig-1)

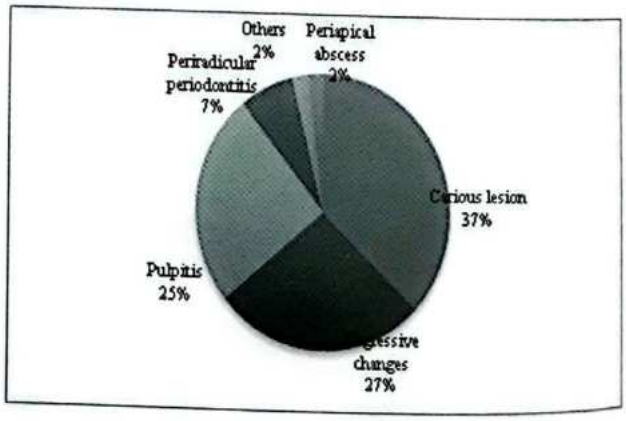

Figure1: Types of cases attended in Department of Conservative Dentistry and Endodontics

Amalgum filling (37%) were the choice of restoration in most of the cases in treating dental caries, while a significant proportion of patient (24%) receive root canal treatment in the department of Conservative Dentistry (Figure 2).

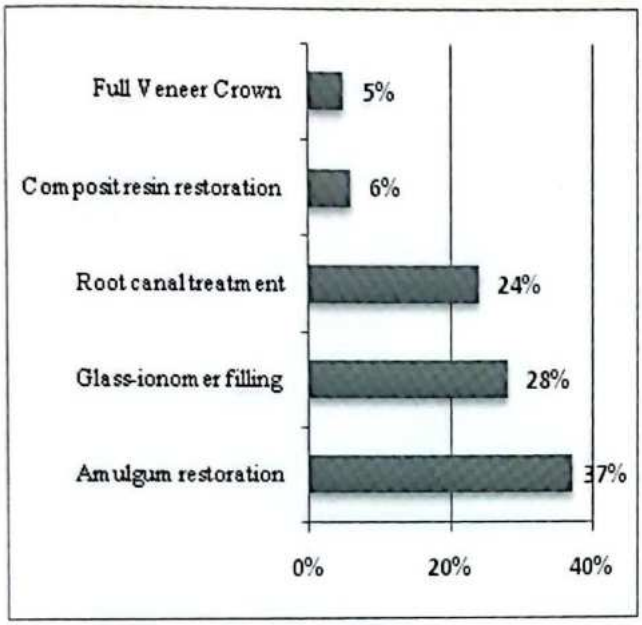

Figure 2: Treatment provided in the Department of Conservative Dentistry and Endodontics

In OPD of Oral and Maxillofacial surgery (OMFS), majority of the patients (35%) came with grossly caries teeth, which could not be restored conservatively. For this reason, Forcep teeth extraction (62%) was the most common modalities of treatment provided in this OPD (Table 1,2)

Table 1: Types of cases attended in Department of Oral and Maxillofacial Surgery

Cases attended in OPD	%	Cases attended in Indoor	%
Gross dental caries	35	Cystic lesions	35
Periodontitis	17	BenignTumors	16
Impacted teeth	17	Jaw fractures	13
Cystic lesions	4	Infection	10
others	27	Others	26

In the indoor of OMFS department majority of the patients admitted with cystic lesions (35%) followed by benign tumours (16%). Besides these, there were significant proportions of different varieties clinical cases (26%) dealt in indoor of OMFS department (Table 1).

Cyst enucleation (28%) and surgical teeth extraction (18%) were the main modalities of treatment provided in the indoor of OMFS department (Table 2).

Table 2: Treatment provided in Department of Oral and Maxillofacial Surgery

Treatment provided in OPD	%	Treatment provided in Indoor	%
Forcep teeth extraction	62	Enucleation	28
Surgical teeth extraction	24	Surgical teeth extraction	18
Pus drainage	5	Fracture reduction	13
Curettage	4	Reconstruction	13
Others	5	Pus drainage	7
-	-	Others	21

In OPD of Periodontology department most of the patients (84%) attended with Chronic Gingivitis while a small proportion were with Chronic Periodontitis (12%) (Figure 3).

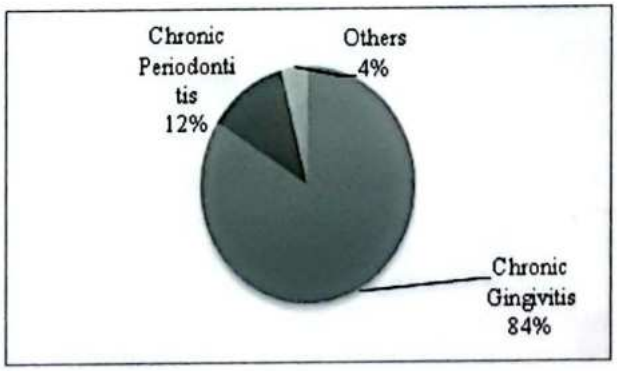

Figure 3: Types of cases attended in OPD of Department of Oral Pathology and Periodontology

Near about eighty percent patients were treated by scaling and oral hygiene instruction in the OPD of Periodontology department (Figure 4).

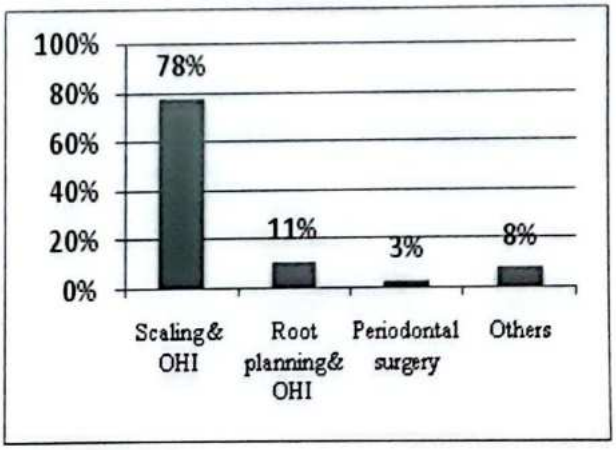

Figure 4: Treatment provided in the department of Oral Pathology and Periodontology

In Oral Pathology department, majority of the diseases identified in histopathological examination were Squamous Cell Carcinoma (22%) while a significant varieties of other (57%) diseases were also detected in histopathological section (Figure 5).

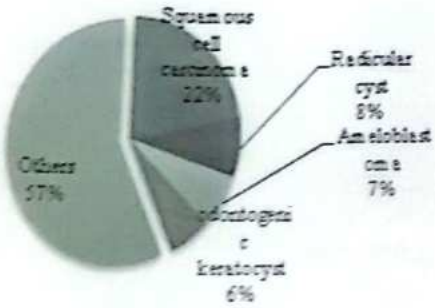

Figure 5: Types of cases detected in histopathology section in the Department of Oral Pathology and Periodontology

In OPD of Orthodontics and Dentofacial Orthopedics department, majority of the patients were diagnosed with Class II Div1 malocclusion. Nevertheless, Removable Orthodontic appliances were leading the choice of treatment in this department (Figure 6,7).

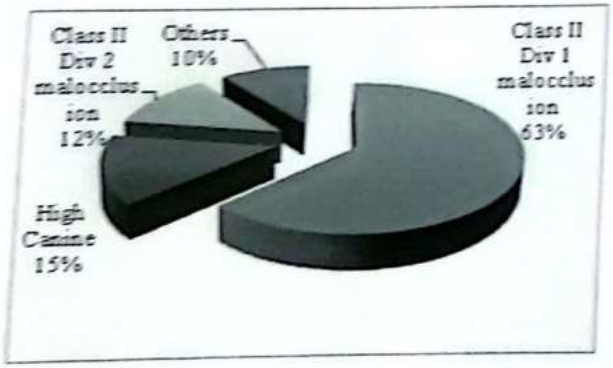

Figure 6: Types of cases attended in Department of Orthodontics and Dentofacial Orthopedics

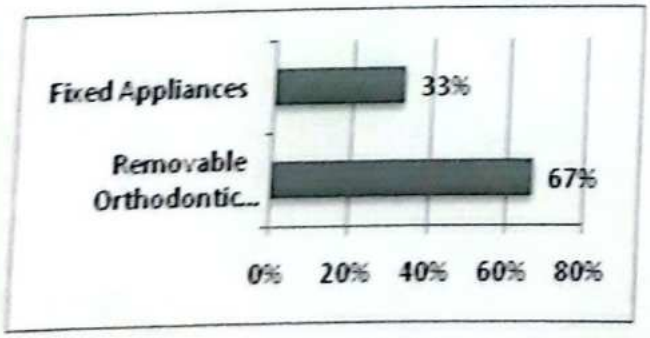

Figure 7: Treatment provided in the department of Orthodontics and Dentofacial Orthopedics

In OPD of Pediatric Dentistry, patients mainly visited with the problem of root resorption of deciduous teeth (35%) and Dental Caries (34%). However, a substantial proportion of patients reported Pulpitis (25%) problem at OPD of Pediatric Dentistry (Figure 8).

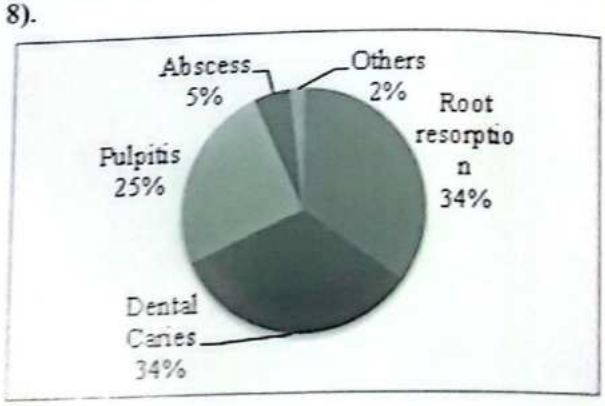

Figure 8: Types of cases attended in Department of Pediatric Dentistry

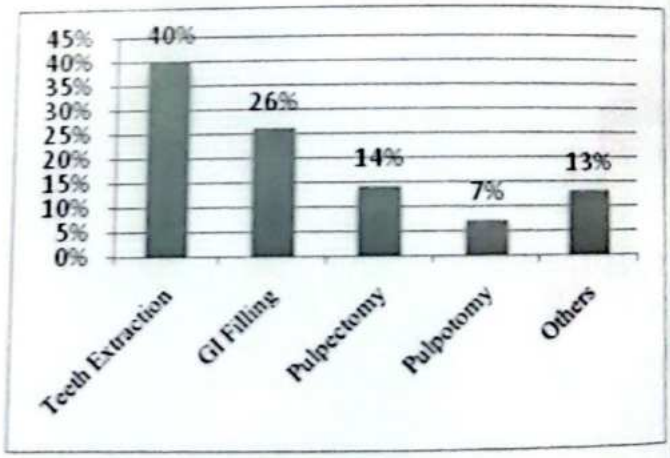

Figure 9: Treatment provided in the Department of Pediatric Dentistry

Teeth extraction (40%) was the main modalities of treatment provided in OPD of Pediatric Dentistry. However, Glass ionomer filling (26%) was the choice of restoration in most of the cases in treating Dental Caries in Pediatric Dentistry Department.

The OPD of Prosthodontic department mainly rehabilitated Endodontically treated teeth (49%) which was followed by partially edentulous jaw (38%) (Figure 10)

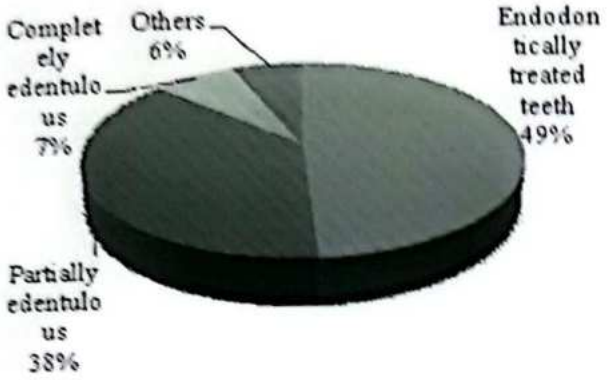

Figure 10: Types of cases attended in Department of Prosthodontics

Most of the patients were treated with Full Veneer Crown (54%) followed by removable partial denture (40%) in OPD of Prosthodontics department (Figure 11)

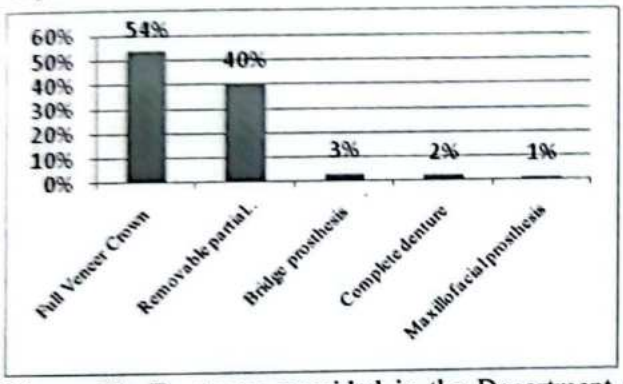

Figure 11: Treatment provided in the Department of Prosthodontics

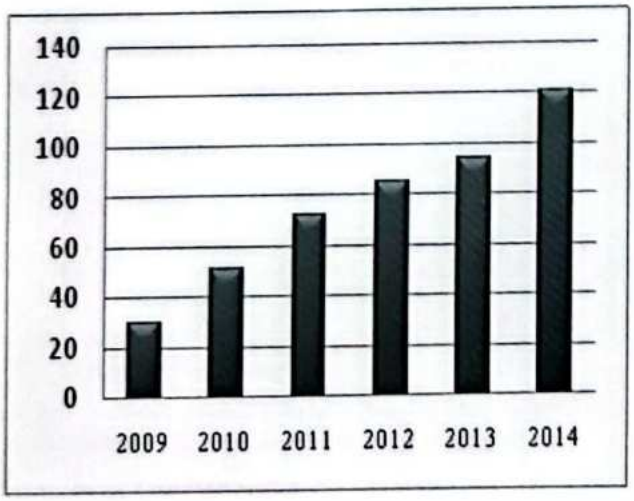

Figure 12: Yearly improvement in the number of patient per day

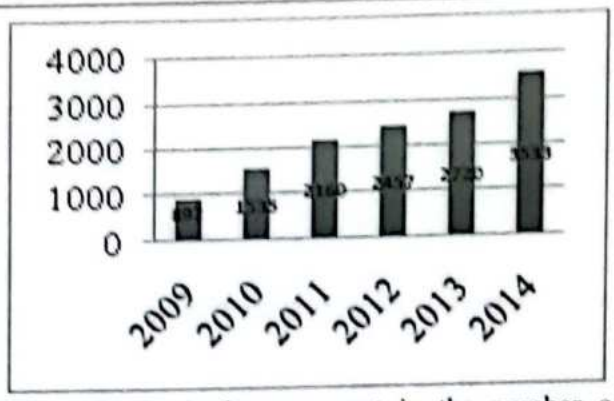

Figure 13: Yearly improvement in the number of patients per month

An increase trend of patients has been observed visiting OPD and Indoor of Sapporo Dental College and Hospital since 2009 until 2014. Number of visiting patients in this hospital, which was around 30 patients per day and 900 patients per month in 2009, became around 120 patients per day and 3500 patients per month in 2014.(Fig-12 &13)

Discussion

The treatment and diagnosis records are entered manually in departmental logbooks, which subsequently preserved centrally in Hospital office. Last 5 years data were collected from this register starting from January 2009 to December 2014. The available record shows a persistent rise of patients in between year 2009 to 2014 (Figure 12, 13) that give us an indication of improving reputation of SDCH in rendering good treatment and in gaining patient's confidence.

According to data on types of cases attended in SDCH, Most of the patients visited with the problem of Dental Caries and the complications associated with it in different OPD. As a result different restorations such as Amalgum filling, Glass ionomer and composite filling were the popular methods of treatment in order to prevent the progression of dental caries. Nevertheless, Root canal treatment, pulpectomy, teeth extraction were the leading proportion of treatment modalities to minimize the complications associated with Dental caries. On the other hand, Full veneer crown and removable partial denture were significantly used to rehabilitate the function of teeth, which was lost by dental caries. Apart from Dental Caries, other problems, which were resulted in visiting SDCH were high level of chronic gingivitis, Cystic lesion, benign

tumour, retain primary teeth and Class II Division I malocclusion cases. Oral pathology department, which is pioneer in Oral histopathology in Bangladesh, diagnosed varieties of oral pathology cases with a majority of Squamous cell carcinoma cases. Removable partial dentures and Orthodontic appliances were the popular options for treatment in managing partial edentulous and malocclusion cases respectively.

Limitations of the study

Sociodemographic data of the patients were not recorded in the patient register properly. Manual entries of patient data sometimes lead into erroneous patients record. Data from the beginning of SDCH were not shown due to loss of patients record before 2009.

Conclusion

The number of patients in SDCH in constantly increasing due to its relentless effort in improving quality of the treatment, minimizing waiting hour and at the same time maintaining the affordable cost for low socio-economic group. Patients mostly visited with the problem of dental caries in various departments of SDCH. A strong inclination to preserve the teeth had been noticed during treatment planning in different departments. Besides management of dental caries, preventive approach should be incorporated in different clinical department in order to prevent future dental caries among visiting patients. Nevertheless, a comprehensive and systematic patient data recording system should be developed in OPD of SDCH for more accurate data recording and retrieval.

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Prevalence and Pattern of Smoke-less Tobacco use among Female Street Vendors in Dhaka City

FR Borna[1], EK Kabir[2], N Barman[3], AHM Khaled[4]

Abstract

Purpose: *Worldwide tobacco use is a preventable cause of premature deaths and additionally that it is also one of the major causes for non-communicable diseases. World Health Organization (WHO) has estimated that smoke-less tobacco is a serious public health threat for women in the Southeast Asian region.The purpose of this study was to determine the prevalence and pattern of smoke-less tobacco use among female street vendors in Dhaka city.* ***Methods:*** *A cross sectional study was carried out in 10 wards in Dhaka. Data was collected by interview from 400 female street vendors purposively.* ***Results:*** *Prevalence of smoke-less tobacco use among female street vendors ware 78.3%. Zarda is commonly used (62%). Respondents' mean age was 37.30±10.862. Almost half of the respondents (48%) had no formal education. About 54% respondents' monthly income was in between 5000-10000 taka and monthly mean expenditure for smoke-less tobacco use was 482.94±233.863. Smoke-less tobacco consumption was associated with age and marital status. Married women were 4.04 (Odds ratio OR=4.04) times more likely to be SLT user than unmarried women. With every single year, increase of age the chance of being SLT user increases 1.116 times.* ***Conclusion:*** *Considering the high prevalence of smokeless tobacco use among the female street vendors anti tobacco activities need to scale up.*

Keywords: Smoke-less tobacco (SLT), Street vendors

(J Cont Dent Sci 2015;3(2):19-23)

Introduction

Tobacco use is a preventable cause of premature deaths globally. Worldwide it is one of the major factors for non-communicable diseases. Currently, over five million people die globally each year due to tobacco-related illness.[1] Tobacco can be consumed both in smoke and smoke-less forms. Out of the total tobacco consumption, more than one-third is smoke-less tobacco. World Health Organization (WHO) has estimated that smoke-less tobacco is a serious public health threat for the women in Southeast Asia region. According to a WHO report (2011), the prevalence rate for smoke-less tobacco use among women in Bangladesh was 28%. In India it was 18.4%, Sri Lanka 6.9% and Nepal 6.9%.[2]

The term 'smoke-less tobacco' is used to describe tobacco that is consumed in an un-burnt form. Smoke-less tobacco can be used orally and nasally. Different types of smoke-less tobaccos are available worldwide, but in Bangladesh the commonly used forms are: gul, zarda sadapata and panmasla.[3] Among the smoke-less tobacco products, gul contains the highest portion of nicotin.[4]

It is extremely important to carry out the study on SLT because the consequences of smoke-less tobacco use are very serious. If a particular group of population is more inclined towards tobacco consumption, that group will suffer most from the effects leading to an inequitable situation.

In a study by WHO SEARO in 2004, it was reported that the prevalence of smoke-less tobacco is very high among the low income and poorly educated people who reside in rural areas.[4] The current research work was based on people who have lack of education, have low income and migrated from different rural areas into the Dhaka city. There is widespread belief that smoke-less tobacco use is less harmful than smoking. It is imperative to change the misconception prevalent among the masses. This may be achieved by a sustainable public education system with sufficient scientific proofs. This study was designed to find out the prevalence and pattern of smokeless tobacco use among the female street vendors in dhaka city with a view to improving the current situation of smoke-less tobacco use by focusing on women's general and oral health.

Materials and Methods

The study was carried out in Dhaka North city Corporation which consists of 5 zones and 36 wards. Among them 10 wards were selected as study area. The areas were.

1. Dr. Farjana Rahaman Borna, MPH, Assistant professor & Head, Dept. Of Dental Public Health, MH Samorita Medical College Hospital & Dental Unit, Tejgaon, Dhaka
2. Khondoker Ehteshamul Kabir, MSc, Deputy Secretary, Ministry of liberation War affairs, Govt. of Peoples Republic of Bangladesh
3. Dr. Neela Barman MPH, Research Associate, Center for Medical Education, Mohakali, Dhaka
4. Abu Hasan Mohammad khaled , MPH, Lecturer, Dept. of Dental Public Health, MH Samorita Medical College Hospital & Dental Unit.

Address of Correspondence

Dr. Farjana Rahaman Borna, MPH, Assistant professor & Head, Dept. Of Dental Public Health, MH Samorita Medical College Hospital & Dental Unit, Tejgaon, Dhaka

Zones	Wards
Zone-1	Khilkhet
Zone-2	Mirpur
Zone-3	Mohakhali, Tejgaon, Boro Magbazer
Zone-4	Monipur, Gabtoli
Zone-5	Mohammadpur, Kawranbazar, RayerBazer

The study was conducted from 1st November 2014 to 31st April 2015 among female street vendors of the target areas. A predesigned semi-structured questionnaire was used to collect data. A total of 400 samples were selected through purposive sampling.

The main outcome variables were prevalence and pattern of smokeless tobacco use among female street vendors. The findings are described by using tables, graph and charts.

Results

Table 1- Socio-Demography of the Respondents

Variables	Frequency	Percent (%)
Age in Group		
15-35	182	45.5
36-55	201	50.3
56-75	17	4.3
Total	400	100.0
Mean Age ± SD 37.30±10.862		
Religion		
Muslim	386	96.5
Hindu	14	3.5
Marital Status		
Married	358	89.7
Unmarried	42	10.5

The study was conducted among the people with aged between 15 to 75 years. Most of the respondents were from 36-55 age groups. More than half (50.3%) of the respondents were from 36-55 age group. Among all the respondents, 386 were Muslim and only 14 were Hindu. About 358 of the total respondents were married and 42 were unmarried.

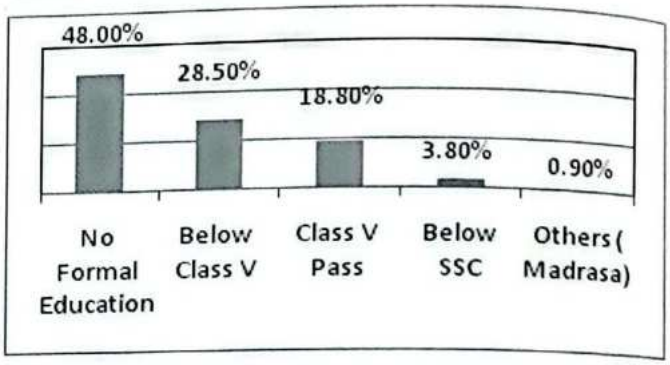

Figure 1: Level of Education of the Respondents. The figure reveals the level of education of the respondents. Almost half of the respondents (48%) had no formal education and less than 5% of the respondents' educational qualification was below SSC (Secondary School Certificate). More than one third (28.5%) of the respondents' educational qualification was below class five (V) and 18.80% of the respondents completed class five (V). A small (.90%) percentage was found educated from Madrasa- religious educational institution.

Table 2: Monthly Income, Expenditure & Expenditure for Smoke-less Tobacco among the Users

Income/Expenditure	
Monthly Income	**Percentage**
Below 5000	18%
5000-10,000	54%
11000-15000	23.3%
Above 15000	4.3%
Monthly mean incomes 8951.25±3544.136	
Monthly Expenditure	**Percentage**
Below 5000	29.5%
5000-10,000	54.3%
Above 10,000	16%
Monthly mean Expenditure 7558.75±3122.748	
Monthly Expenditure for SLT consumption (n=313)	
Below 500	49.1%
500-1000	28%
Above 1000	1.3%
Monthly mean expenditure for SLT 482.94±233.863	

The table shows the monthly income, expenditure of the respondents. From the table it has been found that 54% respondents' monthly income was in between 5000-10000 taka whereas only 4.3% respondents' monthly income was above 15000 taka. About 54.3% respondents' monthly expenditure was in between 5000-10000 taka. About 28% spend 500-1000 taka to consume Smoke-less Tobacco. Almost half of the respondents (49.1%) spend less than 500 taka monthly for consuming Smoke-less Tobacco.

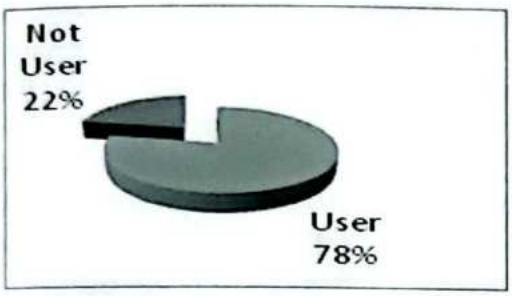

Figure 2: Prevalence of SLT use among the Respondents

Figure 2 shows that among all the 400 respondents, 78.3% consume smoke-less tobacco and only 21.8% do not consume any kind of smoke-less tobacco.

Table- 3 Pattern of Smoke-less Tobacco Intake among the Users (n=313)

Variables	Frequency	Percentage (%)
Duration of SLT intake		
Less than 10 Years	1	0.3
10-24	109	27.3
25-35	187	46.8
Above 35	16	4.0
Mean Age ±SD 25.42±6.16		
Age of initiation of SLT Use		
8-17	25	6.3
18-27	170	42.6
28-37	104	26.5
Above 38	14	3.5
Mean Year ±SD 14.48±8.729		
Frequency of SLT intake		
Daily	303	75.8
More than two times a week	10	2.5
Mean Frequency±SD 2.94±0.352		
Daily Frequency of SLT intake		
Once a time	1	0.3
Two time	46	11.5
Three time	189	47.3
More than three times	77	19.3
Mean Daily Frequency ±SD 3.09±0.631		

Table 3 demonstrates the duration, age of SLT initiation and frequency intake of the users. It was found that 46.8% respondents were taking Smoke-less Tobacco for 25-35 years, about 42.6% respondent initiated SLT use at the age between 18-27 years. About 26 %of the respondents initiated SLT use at age between 28-37 years. About6.3% of the respondents initiated SLT use at age between 8-17 years. About 75.8% users said they took Smoke-less Tobacco daily .About 47.3% took the product three times a day, 19.3% took more than three times a day

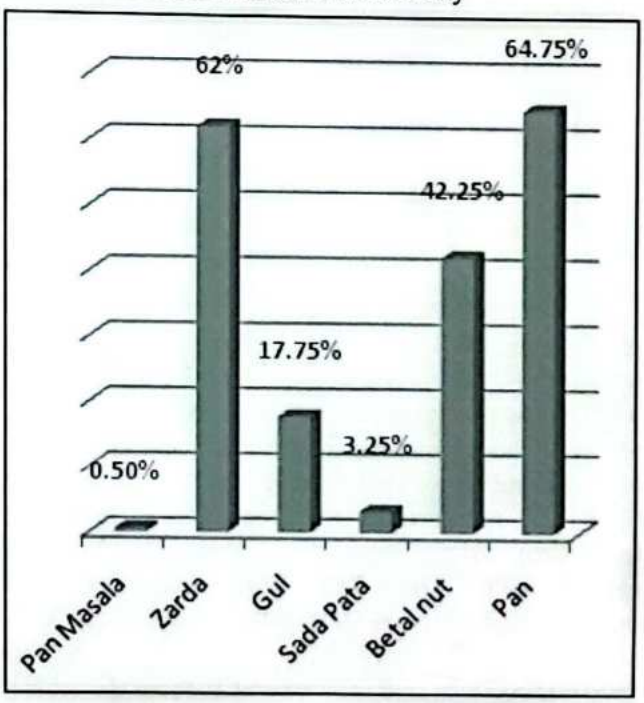

Figure 3: Percentage Distribution Different Types of SLT used by Respondent

The above figure illustrates type of SLT among the users. Most of the respondents (64.75%) use Pan (betel leaves) . About 17.75% and 3.25% of respondents use Gul and Sada Pata respectively. About 42.25% and 62% use Betal nut and Zarda respectively.The table shows the monthly income, expenditure of the respondents. From the table it has been found that 54% respondents' monthly income was in between 5000-10000 taka whereas only 4.3% respondents' monthly income was above 15000 taka. About 54.3% respondents' monthly expenditure was in between 5000-10000 taka. About 28% spend 500-1000 taka to consume Smoke-less Tobacco. Almost half of the respondents (49.1%) spend less than 500 taka monthly for consuming Smoke-less Tobacco.

Table 4: SLT using status by different selected demographic variables

Age group	SLT Intake among Respondent				P value
	Yes		No		
	Frequency	%	Frequency	%	
15-35	114	28.5	68	17	0.00
36-55	182	45.5	19	4.75	
56-75	17	4.25	0	0	
Marital status of Respondent					
Married	303	84.6	55	15.4	0.00
Unmarried	10	23.8	32	76.2	
Income of the respondent					
<5000	52	72.2	20	27.8	0.09
5001-10000	170	78	48	22	
10001-15000	74	79.6	19	20.4	
>15000	17	100	0	0	

Table 4 demonstrates the that the age range of the respondents was 15-75 years. A positive relation exists between age group and consumption of SLT. (As p= 0.00). It has also been observed that about 84.6% (303) of those who were remarried take SLT and 76.2% (32) of unmarried respondent informed that they do not take SLT. The relationship between marital status of respondent and SLT intake is significant. (As the P value is 0.00). About 78% (170) respondents whose income was in between 5001-10000 said they take SLT and 79.6% (74) of those whose income was 10001-15000 also said they take SLT. From the table it can be seen that the relationship between income of the respondent and Smoke-less Tobacco intake is not significant.

Table 5: Result of Logistics Regression Considering SLT using Status as Binary Variable

Variables in equation	B	S.E.	OR	P value
Marital status				
Married	1.397	.493	4.044	.005
Unmarried			1	
Monthly income	.000	.000	1.000	.774
Age	.109	.021	1.116	.000
Dependent variable: SLT using status:1 for user;0 for nonuser				

Table 5 illustrates the strength of effects of different factors on being a user. It is shown that married women**Table 4:** SLT using status by different selected demographic variables were 4.04[Odds ratio, OR=4.04] times more likely to be SLT user than unmarried women. Age has also an impact on being a user. With every single year, increase of age the chance of being SLT user increases 1.116 times.

Discussion

The study was conducted among the respondents of defined socio-economic status (Female street vendors) to understand the pattern of using SLTs. The recent global estimates of smoke-less tobacco prevalence by age group are limited. The trends in smoking prevalence by age are always dynamic and reflect a combination of age, period, and cohort effects. The study found irrespective to age groups, 78.3% of the respondents are currently using SLTs. However, the numbers of SLT users are significantly high among the women over 50 years. With every single year increase of age, the chance of being SLT user develops 1.116 times. Hence, the Policymakers should consider socio-economic patterning of tobacco use in designing, implementing and evaluating smoke-less tobacco control interventions.

A study conducted in the city of Bombay during 2013 revealed that smoke-less tobacco use is widespread among the low educational group of people.[5] The current study findings reveal that almost all the respondents of the study are either illiterate or their educational status is under primary level. In this study, the frequency of use of the SLT products is divided into two standard categories as is done for smoked products, daily and occasional (over twice a week). According to the GATS Bangladesh Report-2009 there are 28% women in Bangladesh taking SLTs daily.[1] The prevalence of daily uptake generally increases with age. The result of this study is found consistent with the results of the GATS report. Elderly women, especially ages 50 or more are found nearly 100% to take SLTs on a daily basis. Frequency of daily consumption also found higher (3 times) among majority of the respondents (47%). In previous studies, it was found that among females, the unemployed category had the highest smoke-less tobacco use (39.6%) and laborers had the next highest (32.7%) among the SLT users. This study found that, apart from these two categories, SLTs are also prevalent greatly among the street vendor women (78.3%).

Conclusion

The study depicts the actual scenario of SLT use among the street vendors, particularly women. It has shown that a high percentage of women (78.3%) of the particular socio demographic status are exposed to SLTs. The Policymakers, aiming to develop, track and implement more effective tobacco control interventions, can utilize the findings of the study. SLT prevalence as reported in this study is comparable with findings of other surveys done in Bangladesh. As there are methodological differences between these surveys, a direct comparison of rates needs to be interpreted cautiously.

Acknowledgement

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Re-implantation of avulsed teeth: A case report

MAH Sheikh[1], MS Alam[2], AA Mahmud[3], M Naser[4], FAA Karim[5]

Abstract

Avulsion of tooth is a grievous injury and ranges from 1-16% among the traumatic injuries, of which maxillary anterior are commonest. Management of avulsed teeth by reimplantation is a challenge for clinician due to extraoral time and media of transportation. Although the longterm prognosis is poor, the time during which the tooth remain within the arch will guide the development of alveolar bone completely Moreover it maintains anatomical, functional and esthetic rehabilitation of the patient. In this case report we are presenting the management of maxillary central incisors by reimplantation, in a 14 yeasr old boy. He came to our Department with the complaint of accidental missing of two upper anterior teeth two hrsafter injury and the teeth were brought intactness by the patient. His medical history was noncontributory and he was tetanus immunized at the accident time. On clinical examination, there was missing both central incisors, crown fractures of both lateral incisors and sockets were full of blood. On palpation, no other teeth were tender. On radiological examination, there was no bony damage in his mouth. With the consent of the patient's guardian, the teeth were reimplanted after completion of endodontic treatment and retrograde obturation and splinted functionally. Splint was removed after 15days. After 3 and 6 months followup, the teeth were assessed clinically and radiographically. PDL space was healed perfectly without any sign of resorption or ankylosis.

Key words: Avulsed tooth, Re-implantation

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Introduction

The 'avulsion' is the most serious periodontal ligament injury; the tooth is completely displaced out of the socket, causing the immediate break from all of the periodontal ligament fibers, blood and lymph vessels and neurovascular bundle. They cause damage to root cement and alveolar bone due to the detachment of periodontal fibers. Approximately1-16% [1] of traumatic injuries to the permanent anterior dentition results in tooth avulsion.[2-3]

The immediate management of avulsed tooth is 'remplantation'. The most of the avulsed tooth

usually lost at the accident scene. Both accident victims and those attending them may neglect it. But, the public should be aware of the possibilities that avulsed tooth can be saved by re-implantation. When re-implantation occurs within 20 min[2-6] or if the avulsed tooth is placed in a suitable storage medium until a dentist can replant the tooth, chance for successful treatment of the tooth is maximized.

There are several possible effects on the root surface and attachment apparatus of an avulsed tooth. These are: Normal PDL healing, Surface resorption, Ankylosis and replacement resorption, External inflammatory root resorption.[7]

A re-implanted tooth should consider as a foreign body. The abrupt and complete interruption and the neurovascular blocking causes complete degeneration of the entire cell population. On dental pulp cell, death is inevitable. In incompletely developed apices revascularization can be expected, on the other hand with closed apices the pulp tissue must be removed and endodontic treatment should be initiated. However this procedure is beneficial to retain alveolar bone and tooth to tooth relationship for a period of time and allow abutments to permit future fixed prosthesis if require.

Though, there are various latest concepts for managing an avulsed tooth; my presentation describes the most simple way of reimplantationHowever, extraoral period was two hours, 6 months follow up reveals no post operative complication.

1. Dr. Md Abdul Hannan Sheikh, BDS, MCPS, DCD, FCPS Part -2 trainee, Dept. of Conservative Dentistry & Endodontics, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh
2. Prof Md Shamsul Alam, BDS, DCD, FADI, Chairman, Conservative Dentistry & Endodontics, BSMMU, Dhaka
3. Dr. Abdullah Al Mahmud, BDS, FCPS, Lecturer, Sapporo Dental College.
4. Dr. Mohammad Naser,BDS, FCPS, Classified Specialist in Conservative Dentistry & Endodontics, CMH Dhaka
5. Dr. Fahd A A Karim, BDS, DDS, FCPS, Asst. Prof. , Update Dental College

Address of Correspondence

Dr. Md Abdul Hannan Sheikh, BDS, MCPS, DCD, FCPS Part-2 trainee Dept. of Conservative Dentistry & Endodontics, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh, E-mail: drhannan65@gmail.com

Case report

An 14 years old boy, came to the Department of Conservative Dentistry & Endodontics, BSMMU, with the complaint of accidental missing of two upper anterior teeth during fighting with his friend near a pond. The teeth were brought by the patient which were healthy and intact. His medical history was noncontributory and he was tetanus immunized. He came 2 hrs after of the accident with the missing teeth immersed into saline. On clinical examination, both central incisors were missing, sockets were full of blood. On palpation, no other teeth were tender. On radiological examination, no bony damage was identifiable.

It was decided to re-implant the maxillary central incisors after appropriate endodontic preparation with the consent of the patient's guardian.

The teeth were placed into sodium hypochlorite for 30 minutes to remove the necrotic periodontal fiber and citric acid for 3 minutes, washed with saline and finally left 5minutes in a solution of 1mg/20ml Minocycline. Endodontic preparation of the teeth were completed using standardized technique by careful holding of the tooth crown with the help of a piece of gauge. Canal was obturated and retrograde filling was done by MTA.

The traumatized sockets were inspected for any bone or tooth fragments. Prior to reimplantation under local anesthesia, the sockets were gently cleaned and light irrigation with saline solution was done.

The root filled teeth were reimplanted carefully into the alveolar sockets by holding it's crown with the fingers to avoid contact with the roots. Complete reimplantation was determined by comparing the incisal edge of remplanted incisors with the incisal edge of the lateral incisors and the position was verified by the guardian. To ensure complete placement of the reimplanted tooth within the sockets, the patient was asked to bite gently and occlusion found normal. The immobilization was done by functional splint. Radiograph was taken to confirm the repositioning of the teeth.

Capsule Cefradine (250mg) was advised for 1week and Tab-Ibuprofen (200mg) was advised if pain occurs. Apart from this the patient was advised to take soft diet, not to bite with the splinted tooth and to maintain proper oral hygiene for 3 weeks, to brush with soft toothbrush after every meal and to use Chlorhexedine mouthwash twice a day, until splint was removed. The patient was advised to recall after 1 week, 3weeks, 3 months, 6 months and yearly for at least 5 years for evaluation of healing of the reimplanted tooth and the pulp status of the adjacent teeth.

The teeth were assessed clinically and radiographically and splint was removed after 3 weeks. 3 months clinical and radiographical evaluation revealed no root resorption, intact periodontal ligament without any periapical pathology. The adjacent teeth were also found healthy by vitality testing and composite filling was done.

Discussion

The treatment of avulsed teeth has changed rapidly in the last several years. The previously reported poor success rates of reimplanted avulsed teeth (4% to 50%) can be improved to over 90% with a modified approach to treatment.[8] The prognosis of an avulsed tooth is proportional to its extraoral time, which is a direct correlation of the status of the periodontal ligament cells.[9] Although there are reports of replanted teeth remaining in function for over 30 years. On an average, they are functional at least for 5 years and most are ultimately lost because of progressive root resorption or other associated problems like ankylosis.[9]

The treatment of avulsed teeth should, therefore, be dependent upon the specific clinical conditions that present to the dentist. These clinical factors are the following: the physiologic status of the PDL, the stage of root development, and the length of time since avulsion (extraoral time). The availability and use of a specialized storage and preservation medium, a cushioning and retrieval system, topical antibiotics, and enamel matrix protein promoters can increase reimplantation success.[8]

T. Sukubushi M reported the ideal extra oral time for successful remplantation is 20 min and the maximum extra-oral time reported in journals is 48 hrs.[10] In our presentation, the extra oral time was 2 hrs. Readily available storage media for an avulsed tooth, in order of preference are: milk, saliva and saline.[11-13] However, another commercially available, antibiotic-

free, protective medium the emt Tooth Saver, Viaspan and Hank's Balance Salt Solution (HBSS) have exceptional ability to keep cells alive for long period (24-96 hours). These are considered to be superior storage media. Kranser showed that tooth stored in the Save-A-Tooth system provides less than 9% of moderate or severe root resorption.[8] Save-A-Tooth system is now considered the standard of care for avulsed teeth and is recommended for use by dentists, in ambulances, in emergency rooms, in schools, and at home.[14] However, Von Arx T used normal saline in his report where extraoral time was 2 hrs. Similarly, Normal saline was used as storage medium for this report also.

On the other hand, in dry environment, death of 50% PDL cells occurs within 30minutes, after 1 hour no viable cementum remains, after 2 hours necrosis of PDL occurs. As an alternate approach for teeth that have been outside the mouth for more than 1 hour in a non-physiologic medium, a regenerative therapy can be used.[14] Since the PDL cells will be necrotic, they are scraped from the root surface and the tooth placed in a sodium hypochlorite solution to remove cellular debris. The root surface should then treated with Emdogain (Biora), an enamel matrix protein solution.[14] Emdogain should also be placed in the socket prior to remplantation. A study by Filippi et al and animal study by Iqbal reported Emdogain has been shown to stimulate the formation of new cementum on root surfaces.[15,16] In this case report, PDL was gently scrapped by soaking the tooth in Sodium hypochlorite for 30 minutes, Citric acid saturated solution for 3 minutes to generate roughness of cementum for new periodontal ligament insertion. Then washed with saline and left in a solution of 1mg/20 ml Minocycline for 5min. Additionally, root canal therapy was completed extra orally prior to the placement of the teeth in the socket.

Immobilization prevents vertical displacement of tooth, but it allows tiny horizontal movement that contributes to periodontal ligament repair. After reimplantation, tooth should be splinted with flexible splint and should be removed in1-2weeks. However, there is exception for recommended period of splinting 4-8 wks when there is associated alveolar fracture.[15] Recently available stabilizing aids are: orthodontic-wire splints, wire composite splints, resin splints, porcelain veneers, miniplast or acrylic splints, currently non-rigid splinting TTS (Titanium trauma splint). In this presentation, 0.3mm orthodontic wire was used to make functional splint which was splinted for 2 weeks using composite resin. A study by Von Arx T revels that TTS offers improved comfort and handling to both the patient and dentist as well as short time immobilization (10days).[17] In other presentation with 2 hrs extraoral time by Adil, splinting was done by orthodontic band and wire, removed after 6 weeks.[18] Furthermore, systemic antibiotic given at the time of reimplantation and prior to endodontic treatment as a prophylactic measures against bacteria.

Conclusion

The long-term prognosis of reimplanted tooth was thought to be poor, but this case found significant success. Although extraoral dry time and media of transportation is a matter of concern in respect of reimplantation, a properly reimplanted tooth with standard protocol may show long term success. So, general people should get the message of urgency of arrival at the dental office with the avulsed tooth/teeth as early as possible.

Clinical steps of replantation, splinting and root canal treatment: (Figure 1-8)

Fig 1. Absence of tooth #11, # 21 following accident.

Fig 2. The avulsed tooth #11, # 21.

Fig 3. Root canal filling.

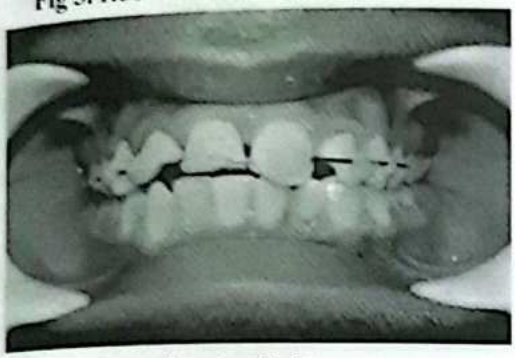

Fig 4. Functional splinting.

Fig 5. Periapical image after replantation of tooth #11, #21.

Fig 6. Periapical image after 3 months.

Fig 7. Periapical image after 6 months.

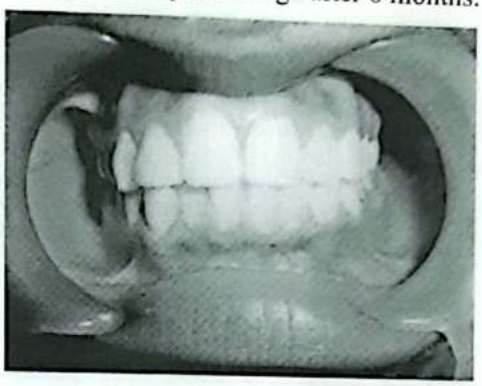

Fig 8. Photograph after 6 months.

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Musculo skeletal disorders among the dentist: A Review

AFM Sarwar[1], MH Kabir[2], SM Moula[3]

Abstract

Dentistry is a physically and mentally demanding occupation. The posture of the the dental surgeon during dental treatment and long hours of dental practice stresses multiple systems of the body leading to some distressing and debilitating aconditions. The review article explores masculo skeletaldisorders (MSD) and associated factors among the practising dentists. The ergonomics for prevention and management of MSDs are discussed in detail.

Keywords: Musculoskeletal disorder, ergonomics, occupational hazards

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Introduction

The word "Ergonomics" was derived from the Greek words: Ergon meaning work, and nomos meaning natural laws which is the science of fitting the job to the workers,[1] and is concerned with designing and arranging things people use so that the people and things interacts most efficiently and safely.[2] WHO defined occupational health is a multidisciplinary activity which promotes and protects the workers health, and also seeks to control accidents and diseases.[3] It is known that the general dentistry is a high risk profession for developing musculoskeletal disorders (MSDs) as it requires high visual demands which result in the adoption affixed postures. The meaning of the posture in ergonomics is the manner in which different parts of the body are located and to allow a special task execution.[4] The objectives of this review are; firstly, to highlight the extent of MSDs-problems related to the dental professionals in different parts of the world and secondly to describe the term ergonomics in dental practice.[5] The risk of the musculoskeletal disorders related to unbalanced postures should determine the dentists take postural corrective actions and compensation measures in order to limit the negative effects of working in a bad posture.[6] MSDs are the cumulative trauma disorders, and the repetitive strain disorders are umbrella terms signifying a set of gradual-onset.[7] High prevalence of MSDs exist among dental practitioners affecting the daily practice of more than one third of the total population of this world.[8] So further studies are needed to identify the specific risk factors for MSD.

1. A.F.M. Sarwar, Department of Children Preventive and Community Dentistry, Dhaka Dental College, Mirpur, Dhaka
2. Md. Humayun Kabir, Department of Dentistry, Shaeed Suhrawardy Medical College, Sher-E-Bangla Nagar, Dhaka-1207
3. Prof. Syed Morshed Moula, Department of Conservative Dentistry and Endodontics, Chittagong Medical College Dental Unit.

Address of Correspondence

A.F.M. Sarwar, Department of Children Preventive and Community Dentistry, Dhaka Dental College, Mirpur, Dhaka

History of musculoskeletal disorders

MSDs in industry or in any factory is not new, in 1717, Bernardo Ramazzini, the father of occupational medicine, first introduced to physicians the common musculoskeletal disorders that arose from eighteenth-century occupations in his treatise De Morbis Artificum Diatriba ("The Diseases of Workers" translated by Wright, 1940).[9] In 18th century, Bernadino Ramazzini recognized the role of occupation in dynamics of health and diseases. Ergonomic- related risk factors for development of health disorders can be categorized as personal variables such as age and hereditary factors or related to work such as monotonous motion, awkward position, force, high static muscle and joint load, vibration, temperature, biological factors, non-neutral body postures, radiation etc.[10]

Aetiology of Masculo skeletal Disorders

According to WHO MSDs is "a disorder of the muscles, tendons, peripheral nerves or vascular system not directly resulting from an acute or instantaneous event (e.g. slips or falls). These disorders are considered to be performance of work contributes significantly, but are only one of a number of factors contributing to the causation of a multifactorial disease." Which results from Prolong Static Posture (PSPs) in dentistry.[11] It is known that a healthy dentist is one of the most important components in a successful dental practice. Accordingly ergonomics became popular in all the fields including dentistry[3] because it is the science of fitting the task to human capabilities and limitation in order to improve work place safety and productivity,[12] and is much broader than preventing work-related Musculo Skeletal Disorders (WMSDs),[2] the single most expensive category of occupational health hazards.[13] Every dentist always know that dentistry is the discipline.

which is a challenging profession[2] to a wide variety of physical and psychological ailments that are induced or aggravated by the work environment and affect the health.[14-15]

Despite numerous technical advances recently many occupational health problems still persist in modern dentistry, these include percutaneous exposure incidents (PEI); exposure to infectious diseases (including bioaerosols), radiation, dental materials, and noise; musculoskeletal disorders; dermatitis and respiratory disorders; eye injuries; and psychological problems. As part of any infection control protocols, dentists should continue to utilize personal protective measures and appropriate sterilization or other high-level disinfection techniques. Aside from biological hazards, dentists continue to suffer a high prevalence of (MSDs), especially of the back, neck and shoulders, for these reasons, it is therefore important that dentists remain constantly informed regarding up-to-date measures on how to deal with newer technologies and dental materials, following are the most common Occupational health problems in modern dentistry, with risk types involving agents are:

Type of risk	Occupational health problem	Agents involved
Biological (Infection)	Infectious bioaerosols from dental procedures, patients and staff, air-conditioning and the environment	Bacteria Viruses Fungi Prions
	Infectious body fluid exposures from per cutaneous exposure incidents	Hepatitis B, C & D HIV
	Respiratory and other communicable illness from patients and staff, e.g. influenza, warts, cold sores	Influenza, cytomegalovirus, measles, mumps, rubella, wart virus, herpes simplex virus
Chemical	Toxicity from dental materials, including respiratory hypersensitivity	Mercury,Methyl methacrylate Cyanoacrylate
	Toxicity from sterilisation methods	Gluteraldehyde Alcohol Ethylene oxide Iodine
	Toxicity from anaesthetic gases	Nitrous oxide Halothane
	Toxicity from airborne particulates	Mineral/fibrous dusts
	Contact dermatitis Irritation	Hand cleaning agents Solvents Powder
	Allergic or latex dermatitis	Latex Acrylics Mercury Sterilisating agents Medicinal agents
Physical	Ionising radiation injury Non-ionising radiation injury Noise induced hearing loss Peripheral neuropathy Burns and scald from autoclaves	X-Rays, Blue/Ultraviolet light, Noise, Vibration
Ergonomic	Musculoskeletal disorders (including back,	Poor posture, Prolonged standing

Generally the dental profession produces muscular pain, and characterized by high visual demands, which results in adoption of fixed postures.[5] Repeated unnatural, deviated or inadequate working postures, forceful hand movements, inadequate equipment or workplace designs, and inappropriate work pattern are likely to be the particular risk factors for MSD's among dentists and ergonomics discipline promotes a holistic, human-centered approach to work systems design that considers physical, cognitive, social, organizational, environmental, and other relevant factors.[17] Dentists as professionals are not an exception to this, as a result most dentists practice beyond their physiologic and psychological limits. Whereby, there is always a tendency among most of the dentists to violate the principles of ergonomics. The common cumulative trauma disorders encountered by dental surgeons are cervical spondylitis, chronic bronchitis, carpal tunnel syndrome, hand arm vibration syndrome and backache,[18] due to insufficient or inappropriate equipment, inappropriate work area, direct injuries, repetitive movements from working with dental instruments, or sitting for extended times with a flexed and twisted back are contributing factors to neck and low back pain.[19] According to WHO and the National Institute for Occupational Safety and Health (NIOSH), the causes of work related musculoskeletal disorders (WRMSDs) are multi factorial including not only workplace conditions and workplace exposures but also organizational, psychosocial and socio cultural factors. It is important to highlight this issue as WRMSDs in dentistry might contribute considerably to sick leave; reduced productivity and future possibility of leaving the profession at an early age. It has been suggested that injuries caused by WRMSDs, which is a challenging profession[2] to a wide variety of physical and psychological ailments that are induced or aggravated by the work environment and affect the health.[14-15]

or similar cumulative trauma disorders, can be reduced or prevented by applying ergonomics in dental equipment by adjusting the patient's chair when accessing different quadrants, placing instruments and materials within easy reach, working with elbows lower than shoulders.[20] These sorts of disorders are also found in the following occupations : [21]

* Nurses aides, orderlies, and attendants * Truck drivers * Assemblers * Janitors and cleaners * Registered nurses * Stock handlers and baggers * Construction laborers * Cashiers * Carpenters

The Prevalence of MSDs problems among dentists

A study in Greece showed: 62% of dentists reported at least one musculoskeletal complaint, 30% chronic complaints, 16% spells of absence and 32% ought medical care. Self-reported factors of physical load were associated with the occurrence of back pain, shoulder pain and hand/wrist pain. The dentistry seems to generate relatively high muscular load on both trapezius and dominant extensor- carpi-radialis muscle. Low-back pain is the most prevalent musculoskeletal complaint in a Greek study - 46% in an Australian study - as much as 53.7%. Dentists who work in the sitting position have more severe low back pain than do those who alternate between sitting and standing. The causes of musculoskeletal pain and disorders common to dental operators are multifactorial. A study in Poland showed that dentists work in conditions which generally produce disorders of the musculoskeletal system. The long working time in the course of a day is used irrationally from the point of view of ergonomics, and over the years consequently increases the number of disorders of the musculoskeletal system[3]. Several studies shows relationship between inadequate posture while doing clinical practice and appearance of pain in the various muscles of the body. Antonio j et al found that dentists are prone to the lesions of the skeletal muscle system due to the clinical exercise of the profession of which muscle pain in the back is most common followed by neck, shoulders and hand. Valachi et al also established a correlation between the presence of pain and specific forced postures: torsion of the trunk, moving of the shoulders towards the side, elevating the elbows, operating light too far away from the line of vision when working on the maxillary arch, working with hands close to the patients face and working for a long period of time. Unthank M showed that lighting at the work place: the lack or excess of light can generate myopia and irreversible retinal lesions, among others[22]. From a review article it was found that the most prevalent regions for pain in dentists have been shown to be the back (36.3% - 60.1%) and neck (19.5-80%).[23] A study done by the British Dental Association (BDA) in 1963, revealed that in a sample of 2,288 dentists, 49% suffered from low back pain. Morris also claims that one out of every two dentists has back pain. In a study by Bassett, 18 dentists in Toronto were suffering from back problem, where 62.2% had suffered back and neck pain at sometime during their lives. Hope-Ross and Corcornan investigated the incidence of pain and discomfort in 650 dentists of the Irish Dental Association. The incidence of symptoms experienced in various body locations was determined. In one particular study pain and discomfort among dentists in the Public Dental Service in Malmohus District and the municipality of Malmo was followed prospectively. The number of dentists participated was 311 and was found the increased prevalence of musculoskeletal pain and discomfort. In 1987 and 1990, 262 out of 311 dentists have had symptoms. In 1987, 24% were without symptoms at the follow up in 1990. In another study of the 359 dentists, female dentists had a higher prevalence of pain and discomfort. Concerning headache, cervical and shoulder pain, possible correlation's between these symptoms and various positions and different working actions were investigated. The results showed that out of the 359 dentists, 55% used the mirror to facilitate a direct view from patient's mouth. It was clear that those dentists who did not have symptoms in the upper locomotor system used the mirror more often than those who did suffer discomfort. After reviewing the prevalence of musculoskeletal problems in dental professionals, it is important to look into the details of working environmental and postural problem related with routine practice of dentistry.[3] Another study from Sichuan University, China. Shows that 85.6% dental postgraduates have MSDs in at least one anatomic region, which was significantly higher than other professional 70% with regarding to specific region, dental postgraduates experienced more MSDs in neck, upper back and lower back. Shoulders 50.8%-65.1%, neck 47.5%-69.8%, upper back 25.6%-46.5% and lower back 27.1%-51.2% were the region's most commonly reported with MSDs.[24]

WRMSDs are problems of the musculoskeletal system that significantly cost workplace problems thus affecting occupational health, productivity and career of the working population. 55-93% of dental professionals (dentist, dental hygienist and dental auxiliaries) experience WMSDs with highest risk among elderly subjects and women. Spine, shoulder, elbows and hands are the most likely area of the body to be stressed and suffer. There is a high prevalence of non-specific lower back and cervical 55% and 38.5% respectively WMSDs among dentists, which were well correlated with the duration of work, posture while operating. The prevalence of general musculoskeletal pain range between 64%-93%. The most common cause of ill health retirement among dentist has been reported to be due to MSDs 55%.[25] A cross sectional study from Sardar Begum Dental College and Hospital and private dental clinics in Peshawar, Pakistan showed that the MSDs among 90% of participants with 49.4% neck pain, 28% in shoulders, 15.3% in wrist, and 17.3% in elbow. Discomfort and pain in hip, knee and foot was 37%, 12% and 17.3% respectively. The MSDs was recorded among 90% of participants with neck pain in 49.4% and thoracic area with 17.3%. [26] In a study from Narayana Dental College and Hospital, Chinthareddypalem, Nellore 524002, Andhra Pradesh, India found 78% of the practitioners had a prevalence of at least one MSD symptom over the past twelve months. The most common areas affected with MSDs in order of magnitude were the neck 52%, low back 41%, shoulders 29%, and wrists 26%.[27]

Mechanism of musculoskeletal disorders

The static postures, which require more than 50 percent of the body's muscles to contract to hold the body motionless while resisting gravity. It can initiate a series of events that may result in pain, injury or a career-ending MSDs. There is a relationship shown betweenprolonged, static (motionless) muscle contractions and muscle ischemia or necrosis. Weak postural muscles of the trunk and shoulder may lead to poor operator posture. As muscles adapt by lengthening or shortening to accommodate these postures, a muscle imbalance may result, leading to structural damage and pain[11].

Mechanisms Leading to Musculoskeletal Disorders

* Prolonged Static Posture * Muscle Fatigue, Muscle Imbalance * Muscle Ischemia/Necrosis * Trigger Points and Muscle Substitution * Pain * Protective Muscle Contraction * Joint Hypomobility, Nerve Compression * Spinal Disk Degeneration/ Herniation Musculoskeletal Disorder[8]

Classification of MSDs

1. Nerve Entrapment Disorders: carpal tunnel syndrome, ulnar neuropathy.
2. Occupational Disorders of the Neck and Brachial Plexus: tension neck syndrome, cervical spondylosis, cervical disc disease, brachial plexus compression.
3. Shoulder disorders: trapezius myalgia, rotator cuff tendonitis, rotator cuff tears, and adhesive capsulitis.
4. Tendonitis of the Elbow, Forearm and Wrist: de Quervain's disease, tendonitis, tenosynovitis, epicondylitis
5. Hand-Arm Vibration Syndrome: Raynaud's disease.
6. Low Back Disorders: chronic low back pain.[21]

Risk Factors for MSDs

Although the causes of any particular case of a MSD are exceedingly difficult to identify with complete accuracy, certain risk factors are typically discussed in the field of ergonomic studies. The primary occupational risk factors for MSDs are include:

* Repetition * Force * Mechanical stresses * Posture * Vibration * Cold temperature * Extrinsic stress[28]

Role of ergonomics in dentistry

The Ergonomic Standard mandated by the Occupational Safety and Health Administration (OSHA) recommended that the most efficient and effective way to remedy "ergonomic hazards" causing musculoskeletal strain should be through engineering improvements in the workstation in dentistry, bad working habits, repetitive tasks - such as scaling, root planning, and uncomfortable physical postures contribute greatly to musculoskeletal disorders, stress, and loss of productivity[29]. A fundamental principle of Ergonomics is to design the work area and the task around the human body, rather than force the worker to adapt to poor design and task function. Ergonomics have one primary objective - the prevention of work-related musculoskeletal disorders, or the symptoms that aggravate these disorders. Available research supports the idea that ergonomic hazards can be managed or alleviated effectively using a multifaceted approach that includes preventive education, postural and positioning strategies, proper selection and use of ergonomic equipment and frequent breaks with stretching and postural strengthening techniques[21].

Signs and Symptoms of MSDs Signs are as Decreased range of motion, Loss of normal sensation, decreased grip strength, loss of normal movement, loss of coordination, excessive fatigue in the shoulders and neck, tingling, burning, or other pain in arms, weak grip, cramping of hands, numbness in fingers and hands, clumsiness and dropping of objects, Hypersensitivity in hands and fingers[30].

MSDs Prevention Strategies

Using of Magnification, Selection of Instruments, Exercise, Chair side directional Stretching, Micro breaks, Weight Control and Scheduling.

MSDs Prevention Methods

Adopting a correct working posture, Use of adequate light, Good planning of dental care session, Alternative planning of long and short session, Alternating the body postures sitting and upright, Having short breaks after each care session, The working day should not be longer than 7 hours, Every 6 weeks a journey should be planned, Sports activities should be practiced for about 45 minutes three times a week[31].

Management

Application of Ergonomic principles can help in reducing MSDs In spite of various positive epidemiological findings there is still an ongoing debate on the potentiality of various risk factors of dental procedures in causing MSDs among dentists. Quantification of the exposure to ergonomic risk factors in dental practice appears to be the most important fact in order to gain a much detail insight on the potentiality of the dental procedures on the causation of MSDs.

Improvement of hand tool design is also effective in reducing the ergonomic risk factors for CTD Majority of the dental instruments are held in pinch grip. Therefore changing the handle design may offer an inexpensive opportunity for reducing hand wrist stress during dental practice.[29]

There are various approaches to treat or manage musculoskeletal disorders, the following are general guidelines observed successful in managing MSDS

1. Health Care Consultation
2. Relief Exercises
3. Medicine and Drugs
4. Bed rest
5. Acupuncture
6. Electro therapy[1]

Parameters of the correct working postures [5]

1 The sitting posture is upright and symmetrical.

2 The shoulders hanging down relaxed with the upper arms beside the upper body.

3 The forearms have been lightly elevated.

4 The angle between lower and upper legs is approx. 105-110 degrees.

5 The legs are slightly apart, making an angle of between 30-45°.

6 The patient's head is appropriately rotated in 3 directions.

7 The light beam of the dental operating light is as parallel as possible to the viewing.

8 The sitting location. Between 09.00- 12.00 o'clock, for left-handed people 03.00- 12.00.

9 The sole should be on the floor

10 The patient's head is rotated and sitting location adjusted.

11 The upper part of the body should be perpendicular on the chair forwards movements should be made curving the spine

12 The head could bend 20"-25°.

13 The arms should be close to the body.

The following exercises can be practiced and performed by dentists on a regular basis in order to prevent MSDs-

Postural Awareness Techniques	Maintaining a low back curve Using magnification systems Adjusting operator chair properly
Positioning Strategies	Avoiding static postures Alternating between standing and sitting Repositioning patients at the proper height Avoiding twisting
Periodic Breaks and Stretching	Chair side directional stretching Stretching during micro breaks Releasing trigger points

Recommendation

The above overview demonstrates the fact that risk factors are strongly related to how time is allocated between tasks, and that this depends to a large extent on the type of rationalisation and how these changes are implemented. Thus, "good practice" regarding smart solutions to ergonomic problems is not in itself suffi cient to achieve sustainable work systems. The production context changes continuously, which makes today's ergonomic solutions inadequate tomorrow.The "dentists" case illustrating the "ergonomic pitfall" is a good example of this. The main challenge for the future is to increase our knowledge of "good practice" regarding intervention processes. These need to take into account that work systems should not only be ergonomic but also competitive, i.e. "sustainable".[13]

Conclusion

Ergonomics have come into the profession in a big way. Further development of dental ergonomics must take place on the basis of a coherent vision of the future. In this regard, it must be clear exactly what ergonomics is and what developments have already taken place. Some aspects of particular interest are:(i) the prevention of occupational diseases; (ii) legal responsibility for protecting the health and safety of employees and students; (iii) education, academic development and research of dental ergonomics using organizational models in daily dental practice. By practicing correct postures, the working capacity and productivity of dental professionals will enhance. They can work in a pain-free environment for quality dental care to their patients. Right Ergonomics along with regular exercises, relaxation techniques (meditation, biofeedback & yoga), and proper nutrition helps us combat stress, thus conserving the productive energy, thereby increasing comfort, improving the quality of life, ultimately leading to extended careers.[29]

Prevention of chronic pain requires that dentists have more knowledge, change their habits, select proper ergonomic equipment, and have a break after each operation with stretching exercise. In doing so, exercise plays an important role in their career to be healthy, safe and have a longer career. Further studies are necessary to find out new dental instruments compatible with ergonomic and to reduce musculoskeletal disorders.[33]

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Lung Involvement in Systemic Lupus Erythematosus (SLE)

D Hussain[1], MF Karim[2], CS Bose[3], A Alam[4], M Pervin[5]

Abstract

Systemic Lupus Erythematosus (SLE) is an autoimmune disorder which affects multiple organs of human including lungs. Pulmonary disease may complicate SLE and is an important cause of morbadity and mortility. This article discusses about the involvement of lung even in the absence of clinical apparent lung disease. Different study shows various pulmonary function abnormalities in SLE patients. The outcome of this article may act as a source of background information for guiding the clinicians about the risk of pulmonary complications while treating the SLE patients. Therapeutic strategies are important for the successful treatment of SLE with lung involvement. Therefore early detection of lung involvement is important in patients with SLE.

Key words: *SLE, lungs, prevalence*

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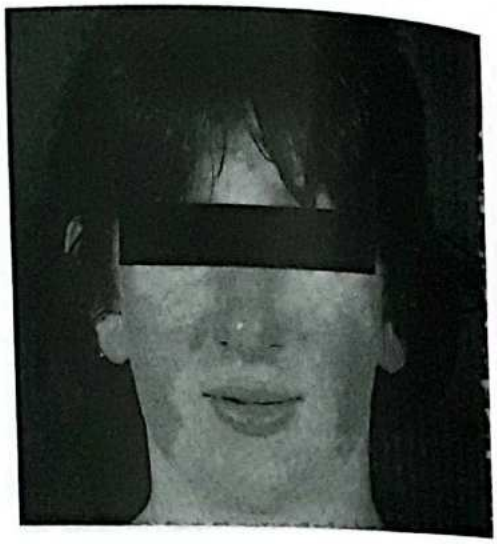
Introduction

Systemic Lupus Erythematosus (SLE) is the most common multi-systemic disorder mediated through the immune system of the human body. It is acute or insidious in onset. It is a chronic, remitting and relapsing. Clinical features of SLE include malar rash, discoid rash, photosensitivity, oral ulcers, arthritis, serositis, renal disorder, neurological disorder and hematological disorder.[1] Similar to the other autoimmune disease SLE is predominant in female. More than half of the SLE patients develop irreversible organ damage over time. Along with other organ involvement lungs were also affected in 88% of SLE patients.[2] In majority of the patients of SLE, the respiratory function involvement is subclinical.[3]

American Rheumatology Association Criteria for Diagnosis of SLE[4]

*Malar rash *Discoid rash * Oral ulcer * Photosensitivity *Arthritis * Serositis *Renal disorder * Neurological disorder *Hematological disorder eg thrombocytopenia, anemia etc



*Immunological disorder eg Anti-phospholipid antibody, Anti double stranded DNA antibody etc * Antinuclear antibody

Diagnosis

Presence of any 4 or more of above criteria makes the diagnosis of SLE[5]

Etiology and Pathophysiology of SLE: Etiology of SLE is still not environmental factors are probably required to trigger the disease such as sun exposure, viral infection,some drugs and emotional stress1,6. These stimuli activate polyclonal T or B cells and may cause ineffective regulation of antibody responses. But they can trigger the disease only in presence with susceptibility genes. Mok and Lau also suggested that B cell hyperactivity and continuous production of pathogenic auto-antibodies are the basis of SLE.

1. Dilroze Hussain, Assistant Professor of Physiology, Kumudiny Women's Medical College, Mirzapur.
2. Md. Fazlul Karim, Associate Professor of Microbiology, Kumudiny Women's Medical College, Mirzapur.
3. Chandra Shekhor Bose, Assistant Professor of Community Medicine, Kumudiny Women's Medical College, Mirzapur.
4. Arifa Alam, Assistant Professor of Physiology, International Medical College, Gazipur.
5. Magfura Pervin, Assistant Professor of Physiology, Tairunnessa Memorial Medical College, Gazipur.

Address of Correspondence

Dilroze Hussain, Assistant Professor of Physiology, Kumudiny Women's Medical College, Mirzapur.

These researchers also stated that loss of immune tolerances, increase antigenic load, excess T helper cells, defective B cell suppression and the shifting of T helper[1] to T helper[2] immune responses were caused these effects.

Tierney[7] again suggested that there is evidence for genetic predisposition to the disease. The presence of HLA-DR2 and HLA-DR3 are significantly common in SLE. Kumer8 again suggested that the presence of genetic predisposition loci regulate production of particular auto-antibody. They also suggested that initial defect in SLE is a failure of the mechanism that maintain self-tolerance. Interactions among genetic, immunological and environmental factors may cause activation of helper T and B cells and results in production of pathogenic auto antibodies. Moreover inherited deficiencies of early compliment such as C2, C4 are present in SLE. These are responsible for failure of the clearance of apoptotic cells and immune complexes. Defective immune regulatory mechanism, failure of self-tolerance in B cells and failure of the clearance of apoptotic cells are important for continuous production of auto-antibodies.

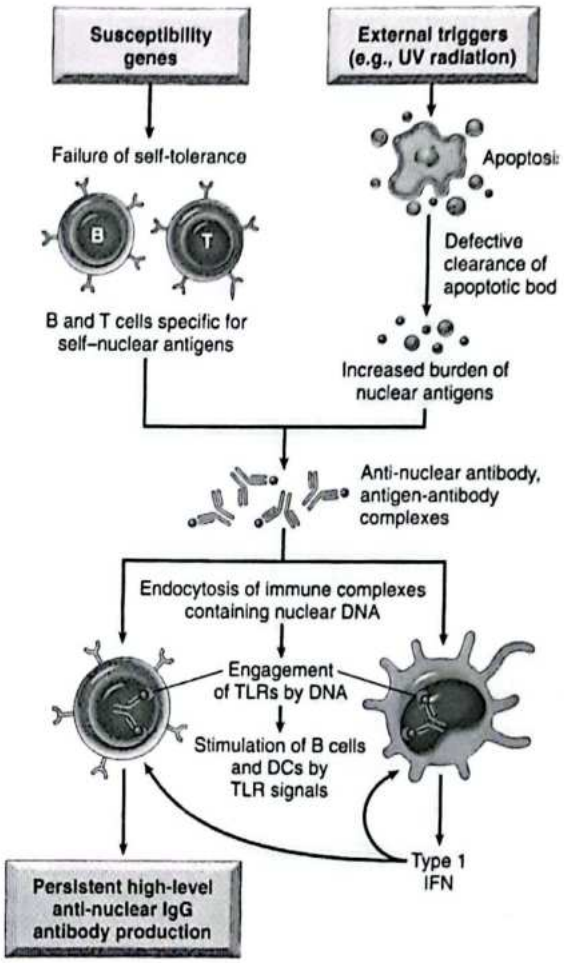
Prevalence

The prevalence of SLE in the USA is approximately 15-50/100000 of which highest is among African Americans1. In other population the prevalence varies between 1:1000 and 1:10000. SLE is about nine times as common in women as in men.[3] They also suggested that, the peak age of onset of this multisystemic disease is 20-40 years.[9]

Pulmonary complications in SLE

Along with other organ involvement lungs were also affected in 88% of SLE patients.[2] Keane and Lynch[10] reported that presentations of pulmonary involvement of SLE this disease may vary in nature and may include serositis, diaphragmatic dysfunction, chronic interstitial pneumonitis, acute lupus pneumonitis, shrinking lung syndrome, cavitating pulmonary nodules, pulmonary hypertension, pulmonary vasculitis, pulmonary embolism, alveolar hemorrhage etc.

Pathophysiology of pulmonary complications: Ong[11] suggested that the process of lung involvement may include immune complex deposition in the lung interstitium and alveolar walls. In addition, antibody



mediated direct cell injury may also lead to alveolar damage. As a consequence, there may be interstitial infiltration of chronic inflammatory cells which may lead to epithelial hyperplasia and fibrosis of pulmonary interstitium and ultimately impaired lung function[5,10]. Weakness of the respiratory muscle and impairment of the nervous system also cause impairment of lung function[11,12,13].

Lung Function Parameters

Pulmonary function tests are the most sensitive means of detecting any pulmonary involvement in SLE[3,8,13]. Various ventilatory variables of the lungs can be measured by spirometer. Several investigators of different countries reported lower spirometric lung variables in SLE patients.[10,11,15-18] Within these variables FVC, FEV1, FEV1/FVC ratio, FEF25-75 and FEF50 were most commonly evaluated.

Grennan[19] reported lower FVC. Similar type of finding was also observed by other investigator.[3,17] Trayno[20] was also reported similar observation in [17] female SLE patients out of.[22]

Along with FVC, FEV1 was also decreased in the same group of patients.[3,11,17,20-21] It was also shown that the deterioration of lung function was related to the duration of the disease.[17]

Again FEV1/FVC ratio was shown to be lower in 60 SLE patients out of 7014. Similar type of finding was also observed by other investigators.[11,17]

Like the other spirometric variables FEF25-75 was also lower in patients with SLE3.[10,13,22] Some other investigators also reported similar type of findings.[11,12,17] Andonopoulos3 reported lower FEF25 in 32.86% of patients with this disorder. Rolla23 also reported similar finding.

Eicacker[17] was evaluated 25 patients of SLE with serial pulmonary function tests with mean interval of time separating pulmonary function tests was 56 months (24 to 84 months). All lung functions were decreased with time in this study. Other investigators also reported similar observation.[3,23]

Conclusion

Lung function study in adults however have reported a high incidence of abnormalities even in the absence of clinical apparent lung disease.[3,11,13,17] Therapy is reported to be beneficial in most patients with early diagnosis of lung involvement and could have an important effect on therapeutic strategies.[24,25] Therefore early detection of lung involvement is important in patients with SLE.[25]

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