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CONTENTS

EDITORIAL

ORIGINAL ARTICLES

TIP BOTTOM APPROACH IN STRENGTHENING HEALTH SECTOR REFORMS

It is my privilege to write few words for the new hallmark in publishing biannual journal of health sciences and I fully appreciate the efforts of the editorial board. This journal will play a pivotal role in highlighting the issues and challenges being faced by the under developed countries particularly Pakistan. I am glad to mention here that this journal will achieve its mission in spreading the knowledge, innovative approaches, research and evidence based technology to overcome the challenges being faced by our country.

It's high time that we should embark on a firm policy to cover up the much needed goals enunciated at the Alma Ata conference in 1978 but so far Pakistan has failed to attain its minimum goals and still poverty, overpopulation, bad governance and lack of leadership in health care are the key elements for our failures.

Pakistan since its independence in 1947 and now in the 21st millennium is having an area of around 800, 000 square kilometers and a vast population of over 180 millions, could not develop a viable health system. The planning machinery too has failed to develop defined health goals and functions to achieve the desirable health indicators. In spite of many commissions and step- ladder 5 years health plans and policies nothing concrete evidence could be elicited in reduction of health indicators. Morbidities and mortalities are still very high and we are still loosing children due to malnourishment.

Poverty, illiteracy, lower status of women in large segment of population, inadequate sanitation and provision of potable water are responsible for ill health and are still being ignored. Pakistan still continues to spend less on health as compared to the poor neighbouring countries and its total expenditure on the health sector is stagnated at 0.6% of GDP. Unfortunately in our country most of the health expenditure i.e 75% is out of pocket. In fact the reality is that 80% of the budget is spent on tertiary care setup while 20% on primary health care.

The three-tiered health system needs to be revisited. The grass root health care infrastructure has not been translated into optimal health delivery due to a number of health related issues which includes imbalances of services in rural and urban population, least motivation of health workforce , bad governance and leadership and lack of national human resources for health policy.

Efforts are being made to strengthen governance and practice's in health care system in KPK. However the health care delivery system requires revamping in the entire country. Unless and until the primary and secondary healty care delivery system is not strengthened there is no likelyhood of achieving millennium development goals by 2030. This must include both state and non-state, and profit and not for profit service provision.

According to UNICEF; despite significant improvement over the past two decades Pakistan ranks towards the bottom among other countries when it comes to infant and new natal mortality. Considering the challenges to mother and child health in Pakistan which could largely be attributed to poverty and compounded by social exclusion and discrimination.

In order to improve health indicators, the country as a whole would need to focus on education and health with top priority with blown up GDP in both the sectors.

Now in this new millennium its high time to reverse the budgetary allocations to reach the poorest and it is hoped that in future a "quick look up" tool has to be developed to face the new challenges and issues in the health sector to give an overall approach to problem solving, to identify the needs and implementations with evidence based specific approaches, let's join hands together to fight against ill health and social deprivation syndrome.

I hope and pray that this publication achieve its mission and goals. I fully appreciate the efforts of the editorial board and the management of the Institute for initiating this memorable journal.

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COMPARISON OF LATE NEONATAL SEPSIS IN BREAST FED AND BOTTLE FED INFANTS ADMITTED TO KHYBER TEACHING HOSPITAL, PESHAWAR, PAKISTAN

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ABSTRACT

BACKGROUND: Infections are frequent and important causes of morbidity and mortality in the neonatal period. Late-onset infections, occurring after one week of life, are acquired in the normal newborn nursery, neonatal intensive care unit (NICU), or the community. The associated factor of late-onset sepsis causing deaths includes lack of breastfeeding among others. Feeding colostrum and breast feeding, especially exclusive breast feeding, protects against such deaths. The objective of this study was to compare the frequency of late neonatal sepsis in breastfed and bottle fed infants.

METHODS: This cross sectional study was conducted over a period of six months, from April 8, 2009 to Oct 7, 2009. Receiving patients from both outpatient department and emergency. 246 cases of full term infants aged 7-28 days with suspected late neonatal sepsis were selected from Neonatology unit of Pediatric department, Khyber Teaching Hospital, Peshawar through non probability purposive sampling. Cultures from blood, urine, CSF and umbilicus in all cases and pleural fluid in selective cases were taken or confirmation of sepsis. Feeding practices of neonates were noted. Mean ,standard deviation, frequencies and percentages, odd ratios with 95% Confidence Intervals were calculated for selective variables while Chi square test was applied using SPSS version 14.

RESULTS: Out of 246 infants with late neonatal sepsis, 140 (57%) were males and106 (43%) females. Mean age was 16.75 days (SD ±5.93); 222(90%) were bottle fed while 24(10%) were exclusively breast fed. Among bottle fed 128(57.6%) were confirmed as having neonatal sepsis while in breast fed, 17(70.8%) were found to have sepsis. Odd Ratio was 0.56 (95% CI=0.22 to 1.40) and p-value equal to 0.212 rendering the result as non-significant.

CONCLUSION: Though no significant association is found between feeding pattern and late neonatal sepsis, It is therefore concluded that bottle feeding is a major contributor in the causation of late onset neonatal sepsis.

KEY WORDS: Neonate, sepsis, breast feeding, bottle feeding.

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INTRODUCTION

Of the 130 million babies born every year, 4 million babies die in the first four weeks of life — the neonatal period[1], more than 10,000 deaths a day[2]. Most of these deaths remain unrecorded and invisible to all but the families who are aggrieved rather than to celebrate the new comer[3] .99 percent of these deaths occur in low- and middle-income countries, with the largest number contributed by the South Asian region. In poor communities, these deaths are unrecorded, indicating the perceived inevitability of their deaths while 1% of neonatal deaths that occur in rich countries are the subject of confidential inquiries and public outcry if services are judged substandard[4,5]. Most trials of neonatal interventions focus on these few deaths in rich countries. The inverse care law, first described in the UK in the 1960s, remains valid: "The availability of good medical care tends to vary inversely with the need for it in the population served[5,6]. For newborn babies, this law could appropriately be renamed the inverse information and care law: the communities with the most neonatal deaths have the least information on these deaths and the least access to cost-effective interventions to prevent them[6,7].

The current global neonatal mortality rate (deaths in the first 28 days of life per 1000 live births) is estimated to be 31 per 1000 live births[7,8]. In developing countries, neonatal mortality from all causes is about 34[8]; In contrast, neonatal mortality for developed countries is about 5. Neonatal mortality in Asia is about 34, in Africa about 42, and in Latin America and the Caribbean about 17,[8,9,10] but still, there are wide variations between different countries in these regions as well as within the countries themselves. It is generally assumed that neonatal mortality in developing countries is under-reported by at least 20%[11]. Indeed with neonatal mortality rates as high as over 40 per 1000 live births[12], India, Pakistan and Bangladesh together contribute to one third of global neonatal mortality. In Pakistan alone, this figure is 55 per 1000 live births[13,14].

MATERIAL & METHODS

This cross-sectional study was carried out in the Neonatology unit

of Pediatric Department, Khyber Teaching Hospital, Peshawar, Pakistan receiving patients from both out patient department and emergency. The study was completed in a period of six months,from April 8, 2009 to Oct 7, 2009. Using WHO sample size calculator, at 95%, 246 cases of full term infants with suspected late neonatal sepsis were selected through non probability purposive sampling. Full term infants, 7-28 days of age, born with uneventful spontaneous vaginal delivery at home or hospital or through caesarian section at hospital, bottle fed or breast fed, presenting with signs and symptoms highly suggestive of sepsis which may or may not be confirmed bacteriologically, were included. Premature and low birth weight infants, full term infants admitted in the hospital for any reason in the first week of life and cared once or more by the hospital staff, Infants with inborn metabolic problems or congenital heart disease were excluded. All full term infants, of any gender, meeting the inclusion criteria, brought to the neonatology unit, from any source (opd, emergency or clinic) were enrolled after the parent's or caregiver's informed/written consent and discussing with them verbally the purpose of the study. Ethical Review Board of Khyber Teaching Hospital granted approval. After the patients were stabilized hemodynamically, before administering antibiotics,in order to confirm late neonatal sepsis, cultures from blood, urine, CSF and umbilicus in all cases and pleural fluid in selective cases were taken with aseptic technique. After sending these specimens to the hospital laboratory, the infants were put on antibiotics as per unit's protocol which was continued or changed depending on the culture reports. Feeding pattern of the infant was determined. All this information was recorded on a pre prepared proforma. The data was analyzed on a computer using SPSS version 14. Descriptive statistics i.e. means and standard deviation, were calculated for continuous variables like age. Frequency and percentages were calculated for categorical variables like sex and feeding patterns. Odds ratios with 95% Confidence Interval

were calculated while Chi square test was used to compare late neonatal sepsis in breast and bottle fed infants. P value < 0.05 was considered significant.

RESULTS

In the six months study period, a total of 246 neonates admitted for late neonatal sepsis in the neonatology unit were enrolled and evaluated for their feeding pattern, whether breastfed or bottle-fed. Of the study participants, 140 (57%) were males and106 (43%) females, while 222 (90%) were bottle fed and 24 (10%) were exclusively breast fed. Among bottle fed 128 (57.6%) were confirmed as having neonatal sepsis while in breast fed, 17 (70.8%) were found to have sepsis Descriptive and inferential statistics are shown in Table 1.

No significant difference was found in the feeding pattern and late neonatal sepsis both as a result of Chi-sq and O.R.

DISCUSSION

This study indicates that protection against neonatal sepsis is given even with partial breast feeding among neonates in a poor community with a high mortality from neonatal sepsis. In these severely ill infants the diagnosis was usually obvious and there were few differential diagnoses. This was especially true because no case of early neonatal sepsis, which can be difficult to diagnose, was seen in this study. It is possible that early cases of neonatal sepsis died at home before they had time to reach hospital. Possibly exclusive breast feeding would provide even better protection[14,15].

Several reviews published during the 1980s 15 questioned whether breastfeeding is causally associated

TABLE 1: STATISTICAL MEASURES

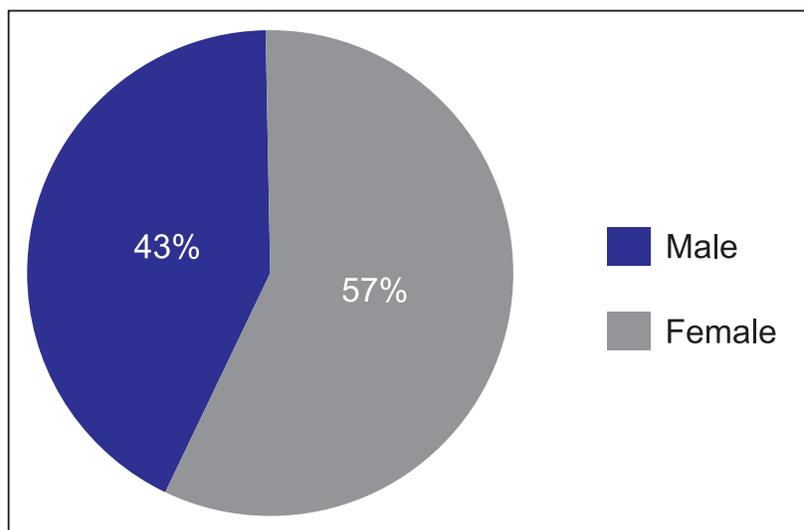| Feeding Pattern	Late Neonatal Sepsis Confirmed		Total
	Yes	No	
Bottle Fed	128	94	222
Breast Fed	17	7	24
Total	145	101	246
O.R	0.56		
95% CI	0.22 to 1.40		
p-value	0.212		
Mean age (days)	16.75 ±5.93 SD		

O.R=Odd Ratios , CI=Confidence Interval

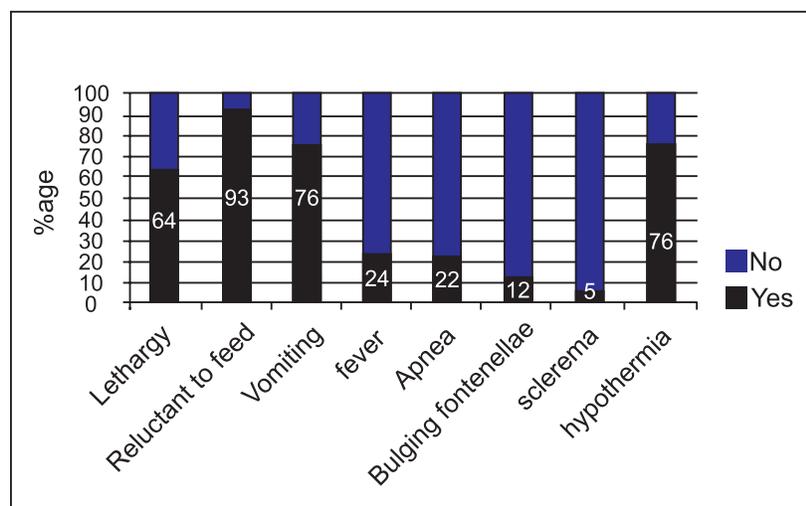Fig 1: Gender wise distribution of Neonates (n=246)

Fig 2: Clinical Features of Neonates (n=246)

with lower rates of illness[16], particularly in the industrialized world. Earlier studies were faulted for problems associated with recall bias, surveillance bias[16,17,18,19], detection bias[19,20], lack of adjustment for confounding, and the fact that illness may precipitate formula use, thus accounting for the association. This study collected data that was recorded cross sectionally in the medical record[21], and incidence of illness as well as feeding practice was assessed along with hospitalization[22,23], thereby avoiding both recall problems and surveillance bias. Because it is ethically impossible to randomly assign infants to feeding groups[24], this study provides the strongest experimental evidence[25,26], which suggests that increases in breastfeeding are causally associated with declines in infant morbidity[27]. Although occasional studies[11,27] find no significant protective effect of breastfeeding on infant illness, the bulk of evidence should be considered with reference to causation[28], because many factors may undermine the ability to demonstrate a particular criterion in a particular situation. This body of evidence strongly supports the hypothesis that formula feeding increases the risk of infectious illness in infancy[29,30].

CONCLUSION

Though this study could not establish a significant association between patterns of feeding i.e. exclusively breast fed and bottle fed, however the fact that promotion of breast feeding, at the community level can decline the incidence of gastrointestinal and respiratory illness. Literature review suggests that increasing rates of breastfeeding, particularly among high-risk groups and in settings with low rates of breastfeeding, is an effective means of reducing infant illness at the community level.

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A CROSS-SECTIONAL STUDY OF ANXIETY AND DEPRESSION AMONG MEDICAL AND NON-MEDICAL STUDENTS

Rubina Tanoli✉, Salma Rahim[1]

ABSTRACT

BACKGROUND: Anxiety and depression are two of the most common mental health concerns in our society. These are often experienced as a complex set of emotional and functional challenges. This study was conducted to explore the levels of anxiety and depression among medical and non-medical female students.

METHODS: This cross-sectional study was conducted in Women Medical College and Comsats University Abbottabad from May 22, 2014 to August 31, 2014.30 medical and 30 non-medical female students were studied. A structured questionnaire based on Beck anxiety and depression scale, consisting of 21 items was used. The parameters studied in students were Educational courses and stressors-anxiety and depression. Data was analyzed using SPSS.V-20 and Microsoft excel 2007. Chi square test was applied while frequencies and percentages were also calculated.

RESULTS: 56.6% of medical students had anxiety as compared to 76.6% of non-medical students, while 43.3% of medical students and 50% of non-medical students had depression. Result was non significant (p>0.05).

CONCLUSION: Though anxiety and depression was found among majority of non-medical students, as compared to medical students ; however this may be due to the fact that this study was conducted at a time when study pressure on students was not that much due to no exams or tests.

KEY WORDS: Anxiety, depression, Beck anxiety Inventory, Beck depression inventory.

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INTRODUCTION

Mental health is essential for person's well-being, healthy family and interpersonal relationship and the ability to live a full and productive life. Mental health and physical health are linked and are associated with the prevalence, progression and outcome of some chronic diseases including diabetes mellitus, heart diseases and cancer. Stress keeps us alert, motivated and ready to avoid danger but too much stress can lead to emotional problems such as anxiety and depression[1]. Anxiety and depression are two of the most common mental health concerns in our society. These are often experienced as a complex set of emotional and functional challenges.

Anxiety and depression are not the same but they often occur together. It is not uncommon for people with anxiety to become depressed. They come from a common source, namely "Serotonin imbalance" but there is also a mental side to both anxiety and depression. When our body makes us feel a certain way, we will treat situation in such a way that they will make us more depressed or anxious. So anxiety leads to depression and depression leads to anxiety. It is beneficial to learn about both conditions[2].

Depression is a common disorder affecting over 350 million people worldwide. It adversely affects a person's family, work or school college life, sleeping, eating habits and general health. Women are 70% more likely than men to experience depression in their life time. Women tend to experience sadness and guilt, men often feel restlessness and angry. Women and adults between the ages of 45 and 64 are most likely to meet the criteria for major depressive disorder. Over 3% of youth ages 13-18 have also experienced a debilitating depression episode[3]. Every third Pakistani is expected to be suffering from anxiety and depression[4].

Anxiety may be a normal reaction to stress and it can serve as a prompt to deal with difficult situations. However when anxiety becomes excessive it may fall under the category of anxiety disorders. It is characterized by emotional, physical and behavioral symptoms that create an unpleasant feeling that is typically described as uneasiness, fear or worry. Besides this individual may feel fatigue, muscle tension, muscle aches, difficulty swallowing, trembling, twitching, irritability and hot flushes. In some conditions anxiety and depression are aggravated by working long hours or overtime. It can interfere with our daily life and make it difficult to cope with everyday activity feelings and thoughts. In 2011 the American College Health association found that about 30% of college students reported feelings so depressed that it was difficult to function at some time[5].

Academic stressors for example high work load, concern about academic performance, sleeplessness, reduced time for social activities, physical exercise, frequent rotation into new environment, and competitiveness amongst students, can lead to depression and anxiety[6]. For students some educational courses that can lead to academic stressors for example medical education is perceived as stressful. Stress has been reported due to academic demand, exams, inability to cope with increased psychological helplessness[7]. The transition from preclinical to clinical training has been Identified as a crucial stage of medical school regarding students stress, all this can result in decreased life satisfaction among students[8].

Stress leading to anxiety and depression during medical school can lead to problems later in professional life compromising patient care. Several studies have been reported for high rates of psychological morbidity amongst medical students than non medical students. Findings are related to academic, financial and social demand that college environment place on students at a time when they are also involved in issues related to lifestyle and career[9].

Previous studies in Pakistan have shown a higher prevalence of anxiety and depression in medical students. A cross sectional study was carried out at Nishtar Medical College in Multan in 2008. Results showed high levels of anxiety and depression among medical students[10].

Another study was done at Ziaud din Medical University in 2003.it was found that medical students experience more anxiety and depression than other educational courses[11].

A study was conducted at Al-Qaseem University Saudi Arabia in July 2007 in which it was found that the prevalence of anxiety and depression in female medical students was higher than males[12].

MATERIAL & METHODS

It was a cross sectional comparative study in which a sample of 60 students (30 medical and 30 non medical) was randomly selected from Comsats University and Women Medical College Abbottabad from 22nd May 2014 to 31st August 2014. Beck anxiety and depression inventory was used as a data collection tool. Only unmarried female students aged 18-25 were selected. Students were assured that the information provided by them will be confidential and only used for the purpose of research. The data was entered and analyzed using Microsoft excel. Chi square test of significance was applied on the results.

RESULTS

Results showed that 56.6% of medical students had anxiety as compared to 76.6%of that of non-medical students; Overall the prevalence of anxiety was higher in non-medical students as compared to medical students. Our result was not significant at $\alpha=0.05$.

DISCUSSION

Anxiety and depression can be taken as reliable indicators for assessment of mental illness in a community. It may affect overall performance of students and can lead to a cascade of consequences at both personal and professional levels.

Most of the previous researches the showed that medical students had high levels of anxiety and depression as compared to non-medical students. A study in Alexandria university revealed that the prevalence of anxiety and depression among students of Medicine was found higher than that in Faculty of Pharmacy[13]. Furthermore, it was noticed that the prevalence of symptoms was higher among females.

Several theories explained that medical students pass through continuous assessment throughout their academic years. Studying medicine is competitive. Several academic stressors were reported in many previous researches. Non-medical students pass through less number of exams and much easier than those of the medical students. Other stated that medical students are liable to be critical of themselves. Moreover medical students tend to be more socially iso-
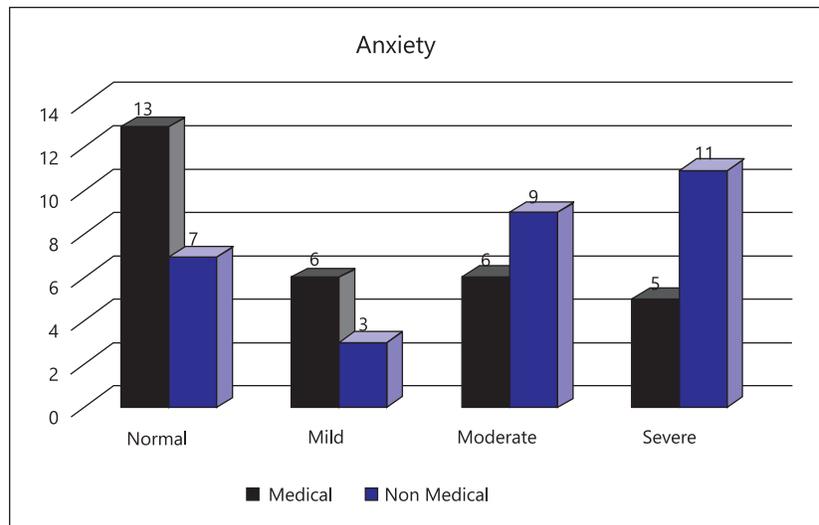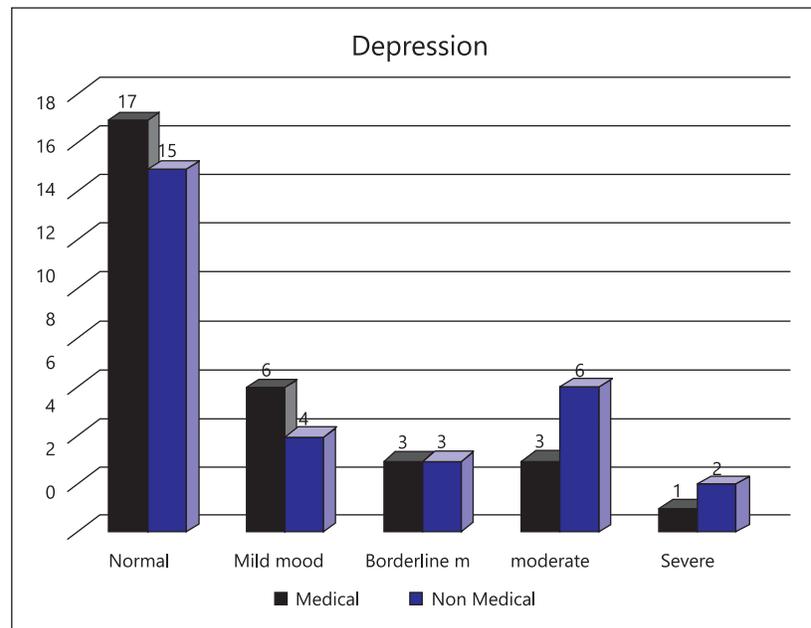

Fig: 01

Fig: 02

lated then other students of different faculties. Medical students may be influenced by all these factors more than non-medical students[13].

However, according to this research the result showed that the level of anxiety and depression is higher in non-medical students than medical students. Level of anxiety was found high in 76.6% of non-medical students as compared to 56.6% of medical students. After applying chi square we found out that our result was not significant at α= 0.05 and the difference noted might be by chance.

Among 30 medical students 13 had no anxiety, 6 had mild , 6 moderate and 5 had severe anxiety. However on the other hand amongst non-medical students 7 had no anxiety, 3 mild, 9 moderate, 11 had severe anxiety. (Figure 1)

The level of depression was also elevated in non-medical students and came out to be 50% compared to that of medical students which was 43.3%. This showed that the level of anxiety and depression was comparatively higher in non-medical students that show that educational course is not the main factor leading to depression. Out of 30 medical students 17 had no depression, 6 had mild, 3 borderline, 3 moderate, and 1 had severe depression. On the other hand out of 30 non-medical students 15 had no depression, 4 mild, 3 borderline, 6 moderate, and 2 had severe depression (Figure 2).

BSC students were having their final exams while the study was conducted, which may be one of the major reason for such elevated level of anxiety and depression. High prevalence of depression in non-medical students may be due to other factors like stress due to self-expectations, competition, increased workload and other social factors. Medical students who showed depression and anxiety may be attributed to the inclusion of final year subjects in 3rd prof for the 1st time.

The generalization of the study results is limited because of the limited size of sample which was recruited from only one private medical college and one private non-medical institute. Other limitations may include, conduction of study purely on female students.

Anxiety and depression can lead to negative outcomes including college dropouts, impaired ability to work efficiently, deterioration in relationship, burnout, and increased suicidal tendency and compound existing problems of health care provision. There is need for greater attention to the psychological well-being of students. However, students on their part should address and maintain their mental health and well-being making it a lifelong focus. There should be a system to identify the prevalence of stressors and to specify the relevant contributing factors in educational institutions. There should be a psychologist for counseling of students going through different stressors in every educational setup. Follow up studies for monitoring prevalence of anxiety and depression will help in instituting intervention strategies.

CONCLUSION

The final conclusion of this study is that medical students do not experience significant level of anxiety as of nonmedical students; however this may be due to the fact that this research was conducted in midyear when study pressure on students was not that much. Some students experienced some level of anxiety as compared to their colleagues, which highlights the need of psychiatric counseling and support services for such students and more leisure activities in their curriculum, promoting better interaction between students and faculty and have advisory service for victims of anxiety.

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ASSESSMENT OF GOOD STORAGE PRACTICES AND GOOD DISTRIBUTION OF PHARMACEUTICALS IN PUNJAB

Imran Ali✉

ABSTRACT

BACKGROUND: Medical Logistics (MedLog) & supply chain management (SCM) is one of the WHO's six building blocks and has key an impact on public health interventions. This study highlights the strengths, weaknesses, opportunities and threats of the pharmaceutical storage and distribution practices at public sector teaching hospitals in Punjab. Good storage and distribution practices of pharmaceuticals have been recognized by corporate and humanitarian sectors as a necessary business functions contributing in competitive advantage in healthcare settings.

METHODS: This descriptive cross sectional study was conducted on five major public sector teaching hospitals across Punjab in a period of three months, selected through non probability convenient sampling. All Pharmacy directors, deputy directors or their focal persons were considered as study participants. SPSS version 20 was used to analyse collected data.

RESULTS: The pharmaceutical good storage practices meet 64% and good distribution practices meet 63% at all selected teaching hospitals.

CONCLUSION: The drug storage and distribution is important component of healthcare level which needs management support in the form of organization, financing, information management and adequate human resource.

KEY WORDS: Medical logistics, Supply chain management, Warehousing, SWOT.

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INTRODUCTION

Medical Logistics (MedLog) & supply chain management (SCM) is one of the WHO's six building blocks and has key an impact on public health interventions. Essential medicine can save lives, reduce sufferings and improve health of certain population[1,2]. Provision of drugs and supplies is critical as the project success is associated with proper management of drugs in the form of good storage and distribution practices, which ultimately are covered under the domain of MedLog & SCM[3]. Thus, good storage and distribution practices of pharmaceuticals have been recognized by corporate and humanitarian sectors as a necessary business functions contributing in competitive advantage in healthcare settings.

National Drug Policy (NDP) was designed for health services and drug management. NDP covers National Essential Drug List (NEDL), drug legislation and other drugs aspects, drugs supply system, distribution for public and private sector, rational drug use, drug utilization, traditional medicine, human resource development (HRD) and hospitals pharmacy setup at provincial and federal level[4].

Healthcare commission of Punjab (PHC) has set indicators to streamline the service delivery of minimum service delivery standards (MSDS) of hospitals[5]. The pharmaceuticals cover the major volume of budget expenditure in any healthcare settings. So, the gaps in implementation of appropriate storage and distribution contribute to a major financial loss, disease burden and mortality. The audit quires on improper storage and distribution practices can affect the donor and beneficiary compliance. Health care supplies are covered by government to provide universal health coverage but there are fewer attentions to ensure proper storage and distribution of these pharmaceuticals[6].

The hospitals in Punjab were constructed a long time ago so the storage sites suggested by planning and development (P&D) do not fit the requirements for proper storage and distribution today. The budget expansion also contributed to workload of inventory management. The underestimated and neglected human resources, either technical or non-technical personnel, result in under performance. Regarding Health policy, the Government of the Punjab does not pay attention to the medical logistics, pharmacy services and regulations[7].

Drug quantification and procurement procedures exist through which drugs and medical supplies are procured to supply[8]. But still we have to improve pharmaceutical supply storage and distribution, for example, recently in 2015 amount of 3.7 million USD were wasted under EPI program due to interrupted cold chain[9]. Fake drug crisis in 2012 in Punjab Institute of Cardiology Lahore claims a death toll of more than 100 cardiac patients which was due to the distribution of drug prior to drug testing laboratory (DTL) clearance[10]. The case of selling drugs without agreement at public sector hospital in Lahore[11], the short shelf life/expired drug donations dispensed to beneficiaries in Lahore[12], the government drugs mismanagement in pharmaceutical waste at Malsi[13] and pilferage of government drugs in Lahore and Peshawar[14,15,16,17,18,19] such incidents were reported in national and international news.

Assessment of good storage and distribution practices of tertiary care public sector hospitals helps to uncover strengths, weaknesses, opportunities and threats. This SWOT analysis then can be helpful in designing TWOS matrix which ultimately provide strategic planning for the medical logistics and supply chain management. It would help in decreasing the financial costs, reduce suffering and ultimately affect public health.

MATERIAL & METHODS

It was a descriptive Cross sectional study, using mixed methods. This study was conducted to determine good storage and distribution practices of pharmaceuticals at main drug stores in public sector teaching hospitals across Punjab, from five major cities of Bahawalpur, Multan, Faisalabad, Lahore and Rawalpindi over a period from September 2015 to November 2015. Public sector hospitals which fell within the jurisdiction of these cities were included while all non teaching hospitals and teaching hospitals not willing to participate or disclose their information for research purposes due to any reason were excluded. Out of twelve teaching hospitals in these cities, eight hospitals were selected through non probability convenient sampling. The pharmacy directors/ deputy directors deployed at the selected hospitals were engaged for warehouse visits. Some of the directors/ deputy directors nominated hospital pharmacists as focal persons to assist. Interviews were conducted form eight healthcare pharmacists.

Quantitative information was conducted using a structured close ended questionnaire while qualitative information was based on face to face interviews. The information obtained was further substantiated through in depth interviews with key informants. SPSS version 20 was used to analyze the data.

A comprehensive checklist was designed in accordance with the Pharmacy Act 1967, Drug Act 1976, National Drug Policy (NDP) Pakistan, international standard material on Medical Logistics & Supply chain documents belonging to Fritz institute USA/ Chartered institute of Logistics and transport (CILT) UK, World Health Organization, UNICEF, Save the Children International, Merlin, MSF, USAID Deliver Project and Sphere standards. Minimum standards meeting good storage and distribution practices were considered in the whole study.

RESULTS

Results are based on qualitative and quantitative data. The trends of good distribution and storage practices are plotted for each hospital.

The pharmaceutical good storage practices meet 64% and good distribution practices meet 63% at all selected teaching hospitals.

SWOT Analysis:

Strengths

TABLE 1: GOOD STORAGE AND DISTRIBUTION TRENDS OF PHARMACEUTICALS IN PUNJAB

Name of Hospital	Good Storage Practices (%age)	Good Distribution Practices (%age)
Bahawal Victoria Hospital, Bahawalpur	73.3	78.3
Nishtar Hospital, Multan	35.6	52.2
Jinnah hospital, Lahore	68.9	65.2
Allied hospital, Faisalabad	75.6	56.5
DHQ hospital, Faisalabad	53.3	60.9
DHQ Hospital, Rawalpindi	86.7	60.8
Holy Family Hospital, Rawalpindi	62.2	69.6
Benazir Bhutto Hospital, Rawalpindi	57.8	60.9
Average of all hospitals	64	63

TABLE 2: TOWS MATRIX OF GSP & GDP EXPLAINING THE STRATEGIC PLANNING

TOWS Matrix	Strengths	Weakness
Opportunities	SO 1: Utilizing the experienced staff on IT software and gadgets would improve overall efficiency of supply chain. SO2: The provision of up to date supply chain tools like pallet racking, fork lifter, mapping etc can provide additional storage space, save time, recourses and energy.	WO1: Keeping in view the limited space we can build pallet and floor racking with adjustable/ moveable racks. WO2: Donor funded purpose built main drug stores can be built. Hiring of technical and non-technical staff. WO3: The experienced staff can be offered supply chain diplomas, certifications or degree which can produce champions.
Threats	ST1: Suppliers assessment and focus on procurement of quality drugs. Identify competent suppliers. ST2: The pharmaceutical marketing and physician`s evening practice should be discouraged.	WT1: The pharmaceutical waste pilferage reported in some hospitals can be covered by 3rd party contracting with competent organization WT2: Stock insurance should be initiated.

The internal capacities to capitalize the teaching hospitals are as follows:

S.1: The supply chain documentations are followed for storage and distributions at every teaching hospital. Some hospitals are vigilant in finalizing management of medicine (MOM) of their own. Healthcare commission of Punjab had included this parameter in minimum service delivery drug management standards (MSDS).

S2: Experienced human resource is dealing with multiple areas of medical logistics and supply chain such as pre-qualification, procurement, storage, distribution, transportation, disposal of pharmaceuticals. They have been dealing with constrains and are flexible enough to bear the work pressure.

S3: The capacity to manage drug supplies efficiently. First expiry first out (FEFO) rule to manage shelf life data, expiry alerts return policy. The labelling requirements of "Govt. property, Not for Sale" The pharmacists are familiar with WHO storage and distribution guidelines.

S4: The emergency preparedness contingency stock available at each station to cope any humanitarian crisis.

S5: The available warehouse infrastructure with logistics representative (Pharmacist).

S-6 Drug regulatory policy and drug laws regulating the pharmaceuticals need to be updated with time. The positive changes needed.

S-7: The surveillance data on ADR reporting, Pharmacovigilance.

Weaknesses

W1: Limited storage space is allocated for drug storage. None of the warehouse is purpose built drug central pharmacy/ main drug store/ warehouse sufficient to store annual turnover of drugs round a year. Some stocks are stored out of sight in different wards and galleries.

W2: The limited human resource both professional and non-professional and overburden supplies have decreased their capacity. Pharmacists are not enough to ensure rational drug use. In addition, none of the pharmacist has supply chain diploma/ certificate.

W3: Ongoing training and capacity building is deficient in the system regarding hospital SOPs, protocols & formulary development, pharmacy and therapeutics management, HR, security, first aid, fire fighting etc.

W4: There is staff disappointment with the benefits provided. The negligence of policy makers and stewardship. The allowances of pharmacists are not improved as that of physicians and nurses working within hospital setup.

W5: The floor and pallets racking needed at each premises (industrial level) based on the supply chain volume. The manual supply loading/ unloading is associated with risks and challenges.

W6: The underutilization of pharmacy services. Some services could not be initiated such as clinical pharmacy, unit dose dispensing, extemporaneous preparations, Total parenteral nutrition (TPN), pharmacoeconomics or pharmaceutical care etc.

W7: The emergency tray medicines are not quoted in the supplier bidding and are purchased at high rates.

W8: The pharmacy management tools are deficient such as rodent control, availability of updated books and reference material, first aid kit.

W9: Weak internal controls and performance evaluation indicators.

W10: Research and publications are rare in pharmaceutical supply chain to draw attention of leaders and policy makers.

Opportunities

O1: Strong written need of capacity building training workshop on pharmaceutical/public health logistics and supply chain management. The stakeholders (DRAP, PHC, WHO) should conduct trainings on pre-qualification, procurement, storage, distribution, transport and safe disposal.

O2: To equip with technical gadgets, inventory management software and trainings meeting international standards. (Environmental impact).

O3: To train with international supply chain tools, handling equipments and support.

Threats

T1: None of the Pharmacy stocks is insured and hazard of fire, electric shock or pilferage. The firefighting equipment and supplies are optimum. No fire alarms, no water sprinkles installed at any drug store in Punjab.

T2: Patients and qualified professionals or staff is not happy with the quality of drugs procured for hospital. Community compliance needs to be studied.

T3: Pharmaceutical marketing and biased prescriber tendency to achieve sale targets at hospitals and evening practice. Patients are prescribed to buy drugs from market without feasibility of affordability.

T4: The challenges in import of active pharmaceutical ingredient and monopoly in artificial shortage.

T5: Independent monitoring and evaluation (M&E) is weak to spot shortcomings and end corruption from drug procurement to utilization.

TOWS Matrix for strategic planning

The tool is further expanded on a matrix which explains the combinations of SWOT into a matrix. This detailed information is suggestions for strategic planning to cope with the gaps in good storage and distribution practices in teaching hospitals of Punjab. These outcomes can be used as agenda settings of possible improvements in supply chain.

DISCUSSION

The teaching hospital got professional trainings environment. Physicians, dentists, nurses, pharmacists as well as para-medical students have practical trainings, internships, and orientation. The study on good storage and distribution practices of teaching hospitals reflect limited recourses, partial human recourse, with no trainings/workshops for pharmacy services have depressed pharmacists. They are aware of the good practices but are forced to manage medical commodities unethically. The technology is still out of reach in 2015 in Pakistan. In the institutions evaluated, very few computers can be seen that too only at the draft office for correspondence purposes. The regional and global advanced interventions are still not incorporated.

The pharmacist to patient ratio was agreed as 1:50 by the politicians in Punjab but it is still pending. Inad-

equate pharmacists are not able to accomplish all activities efficiently. Regional health system observatory EMRO, Health System Profile Pakistan states " The pharmacists lying in category A (Whole selling) and B (wholesale + retail) providing consultancy and dispensing are non-qualified person"22 Whereas WHO integrated model has rated pharmacist 8 star professional for the professional skills which are care giver, communicator, decision maker, leader, lifelong learner, manager entrepreneur, teacher and team player. Need to establish independent medical logistics pharmacy services department in Pakistan who can ensure quality assurance, rational drug procurement, drug management, storage, distribution, monitoring & evaluation (M&E) and proper pharmaceutical waste disposal. The department should be independent and work in close collaboration with stake holders. Such examples exist in the Asian countries like Philippines who got National Centre for Pharmaceutical access and management (NCPAM) which is working with close collaboration with Philippines-FDA23.

CONCLUSION

The drug storage and distribution is important component of healthcare level which needs management support in the form of organization, financing, information management and adequate human resource. The quality storage and right distribution practices are essential components of pharmaceutical supply chain management. The limited technical and support staff in stock management is ultimately implementation, performance and output of quality healthcare delivery at hospitals. One pharmacist per fifty beds ratio is the demand of pharmacists in hospital settings of Punjab which is still under process. Drug regulatory authority of Pakistan (DRAP), Pharmacy Council of Pakistan, World Health Organization

(WHO) Pakistan, and related stakeholders and Health Services academy, Islamabad should make a committee to regulate drug storage and distribution.

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PRACTICE OF PRE OPERATIVE SCRUBBING AT PRIVATE HOSPITALS IN ABBOTTABAD

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ABSTRACT

BACKGROUND: Scrubbing is a term used to describe the process of hand and forearm decontamination required by surgical team prior to commencing any surgical or invasive procedures. 5-10% of patients in developed and 25% of patients in developing countries acquires hospital acquired infections.

This study is conducted to know the frequency of pre-operative scrubbing in private hospitals of Abbottabad.

METHODS: This cross-sectional study was conducted from 4th May, 2015 to 12th July, 2015.

Data was collected from randomly selected 10 private hospitals of the city. All the Operation Theatre doctors and paramedical staff members who gave consent were included in this study. A total of 60 study participants were selected through non-probability convenient sampling. A self administered questionnaire was used. Data was analyzed using SPSS .

RESULTS: Out of 60 participants at 10 different private hospitals, all were following pre operative scrubbing protocols. Majority of study participants washed hands for a minute. Availability of soap was confirmed by all but one individual.

CONCLUSION: All private hospitals were observing pre operative scrubbing protocols ,however on individual levels, there were some discrepancies.

KEY WORDS: Surgical Scrubbing, Pre operative, Private hospital.

INTRODUCTION

Hospital acquired infections are a major cause of death and disability worldwide. 1.4 million Peoples worldwide suffer from infectious complications associated with healthcare.[1] WHO estimates that 5-10% of patients admitted to hospitals in developed countries acquire hospital acquired infections, and in developing countries the proportion effected can exceed 25%.[2]

Surgical hand antisepsis of surgical staff is a standard procedure used worldwide in order to reduce the risk of surgical site infections.[3]Surgical hand preparation in 19th century was done by washing hands with antimicrobial soap and warm water with use of a brush.[4]Total bacterial count on hands of a medical personal *have* ranged from 3.9 x 10^{4} to 4.6 x 10^{6}cfu/cm[2,5.]

"Scrubbing" or "Scrub" is a term used to describe the process of hand and forearm decontamination required by the surgical team prior to commencing for any surgical or invasive procedure.[6] The surgical scrub is a systemic washing of the hands and forearms and scrubbing of finger nails using especially developed techniques and the most

effective antibacterial cleansing agent available.[6] The hands can be a portal and transmitter of infections. While hand washing maybe the simplest way to control infection, there are some rules that must be followed, for controlling infections, which are called as protocols**.** The contribution of the surgical scrub is critical in reducing the incidence of operative wound infections.[7]

The procedure for the scrub timed five minutes consists of:

1. Remove all jewelry (rings, watches, bracelets)
2. Wash hands and arms with antimicrobial soap. Excessively hot water is harder on skin and dries the skin
3. Clean subungual areas with a nail file
4. Scrub each side of each finger, b/w the fingers and the back and front of hand for 2min
5. Scrub arms keeping hand higher than the arms
6. Wash each side of arm to three inches above elbow for one minute
7. Rinse hands and arms by passing them through water in one direction only.[7]

In preparation for scrubbing, personal cleanliness is extremely important for the operating theatre personnel. A daily shower, frequent hand washing and attention to hands and finger nails are most important.[6]

Different studies have shown that surgical hand antiseptics have definite impact on surgical infection rate.[4] The hands of health care workers are the primary mode of transmission of multidrug pathogens and infections to parents.[9]

The reason for poor hand hygiene practices include lack of scientific knowledge, unawareness of risks, misconceptions (e.g. glove use obdurate the use for hand hygiene), in availabilites of hand hygiene facilities (sinks or alcoholic dispensers), lack of role models among colleagues or superior understaffing or patient overcrowding and lack of institutional priority.[10]

Proper hand hygiene can prevent health care associated infections and spread of antimicrobial resistance. Antimicrobial resistance prevalence rates are increasing in many countries around the world.[11]

Multiple in vitro and in vivo experiments have indicated considerably better antimicrobial killing with alcohol hand disinfectant than with hand washing. The use of alcohol based hands rub has been associated with decrease in nosocomial infection rates.[9] The hand should be wet with an alcohol based rub during the whole procedure,which require 15ml depending upon the size of the hands. One study demonstrated that keeping the hand wet with rub is more important than volume used.[12]

Plain soaps failed to remove pathogen from hand .Alcohol used are ethyl alcohol, isopropyl alcohol, N- proponal are used containing 60-90% concentration having germicidal activity against Gram positive and negative, Mycobacterium TB, Fungi, Herpes simplex, HIV, Hepatitis B virus, HCV.[11]

Surgical hand antiseptics with medicated soaps require clean water to reuse the hands after application of medicated soaps. Pseudomonas species are isolated from taps/tawels in hospitals.[13]

Hospital acquired infections are a major cause of morbidity and mortality. Many of these infections especially in operated patients can be prevented by following preoperative protocols of surgical hand scrub Procedure .When a surgeon opens up human body he introduces into many infections not only from the environment but also through the hands he uses, the infections can later cause many complications. Nosocomial infections in operated patients are preventable by surgeons by proper hand washing and wearing gloves. The rate of Nosocomial infection after surgery in private hospitals is very high and is persistently on the increase . The purpose of this study is to see what exactly the cause of increased infection rate is. We want to see whether the standard protocols are being followed by surgeons preoperatively in private hospitals.

In this study the doctors, nurses and paramedics of 10 private hospitals that were randomly selected, were assessed whether they observed scrubbing pre operatively or not.

MATERIAL & METHODS

This cross-sectional study was conducted from 4th May, 2015 to 12th July, 2015.All doctors and paramedical staff related to Operation Theatre (OT) were included in this study.

Randomly selected 10 private hospitals in Abbottabad city were approached. A non probability convenient sampling was done achieving a sample of 60 individuals. A self administered questionnaire was used to collect data from study participants. For data analysis, SPPS version 20 and MS Excel 2007 were used. The names and identity of doctors and staff members is not disclosed. Ethical approval was granted by Women Medical College.

RESULTS

We conducted a survey in Abbottabad to assess the hand hygiene status and surgical protocols followed by different Private Hospitals and identify the cause of spread of nosocomial infections in such setups. A total of 10 Private Hospitals were selected for the purpose, with the results thus obtained are as under:

DISCUSSION

Hospital acquired infections are the major cause of disability world wide .In Pakistan they are considered as the most pressing health threats and are major cause of morbidity. Surgical site infections are studied worldwide but are given less emphasis and are also studied less in developing countries like Pakistan.

Proper surgical hand antisepsis can reduce this risk as hands are the portal transmitter of infections .These infections can be controlled by a simple and easy way as handwashing. The WHO has proper protocols of pre surgical handwashing and scrubbing following which will greatly reduce the risk of surgical acquired infections.

The Private hospitals in Abbottabad have been found to have knowledge of hand washing and scrubbing and they all believed that by following proper protocols the incidence of hospital acquired infections can be reduced.

The proper duration recommended for hand washing is 60 seconds. According to our study,45 0ut of 6 individuals in private hospitals were using proper duration of hand washing i.e. 20 to 60 seconds .This result is quite similar to the study in which overall mean of hand washing time was 49.8 sec. [14.]
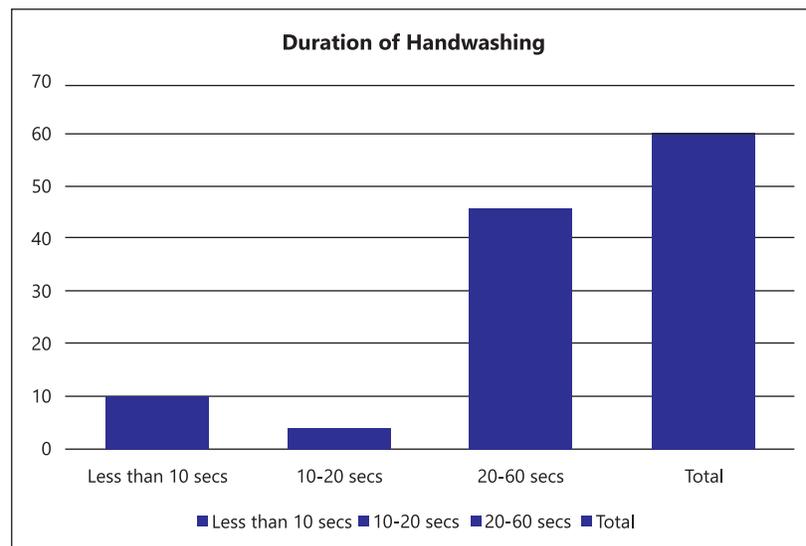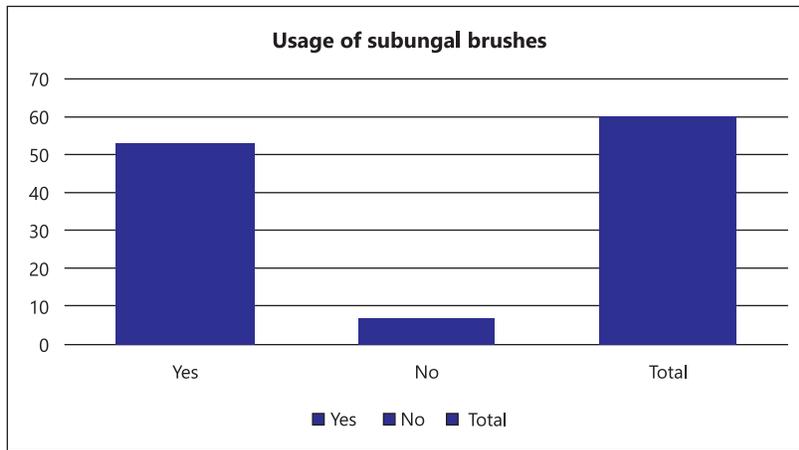

Figure 1:

Usage of subungal brushes
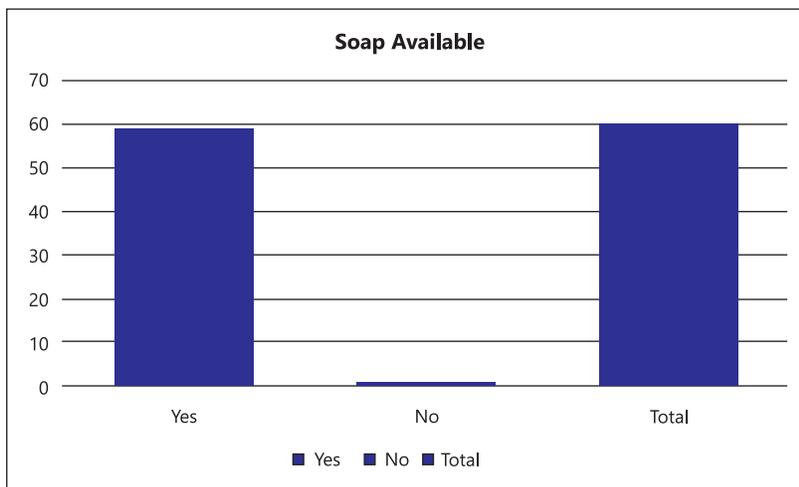

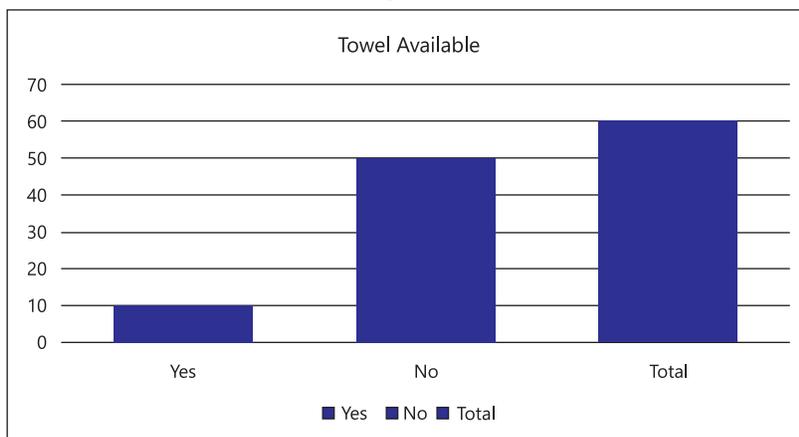Figure 2:

Soap Available

Figure 3:

Towel Available

Figure 4:

As far as use of subungual brushes is concerned,all hospitals were following this, but only 9 individuals were not using this which is quite in contrast to many of the studies conducted like the one in which 16 .8% used brush for nail only and 9.4% used brush for hands and arms. [14.]

A study conducted by Mortimer in newborns and another study conducted by Philips which shows that hand hygiene must be performed before and after touching the patient.[15,19]

Surgical hand antisepsis should be performed using either a suitable antimicrobial soap or suitable alcohol-based handrub, preferably with a product ensuring sustained activity, before put on sterile gloves.[20,27,] Hand hygiene product which is ideally used is alcohol rub which was used scarcely according to our study.

Soaps were available in almost all hospitals and towels were not used. All the health personnels. Hand Hygiene is the most important step to prevent transfer of microorganism in the hospital settings.

CONCLUSION

Though pre operative scrubbing is mostly observed by health care workers in private hospitals, there should be written protocols everywhere in the hospitals and hospital administration should make it mandatory. Supply of materials like antiseptic solutions and brushes etc should be ensured. Periodic workshops on pre-operative scrubbing needs to be arranged.

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FREQUENCY OF COMMON BECTERIA AND THEIR ANTIBIOTIC SENSITIVITY IN COMPLICATED URINARY TRACT INFECTION

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ABSTRACT

BACKGROUND: Urinary tract infection (UTI) is the second most common infectious complaint in geriatric clinics overall, and the most common outpatient complaint caused by bacteria. Studies have found that the elderly do not lack a febrile response; that an elevated temperature was the most common initial symptom, a marker for a serious infection, and the most important clinical indicator for antibiotic treatment. Study objective was to determine the frequency of common bacteria with their antibiotic sensitivity among elderly male patients presenting with complicated urinary tract infection.

METHODS: Descriptive cross sectional study from Feb 2015 to Feb 2016. The study will be carried out in the outpatient department of Urology, Institute of Kidney Diseases (IKD), Hayatabad Medical Complex, Peshawar. Sample size was 193 using 8.8%18 of Klebsiella Pnumoniae among elderly patients with UTI, 95% confidence interval and 4% margin of error under WHO sample size estimation software.

RESULTS: In this study, 193 male patients were observed. Average age was 70.76 years + 4.48SD. Distribution of common bacteria shows that Escherichia Coli was found in majority of cases which is 77(39.90%), followed by pseudomonas aereginosa in 73(73.8%), klebsiella was observed in 66(34.2%) patients while 69(64.2%) patients have enterobacter.

CONCLUSION: High prevalence of drug-resistant urinary tract pathogens, particularly to Ciprofloxcin, Ceftriaxone and Gentamycin suggests cautious use of antibiotic therapy for the treatment.

KEY WORDS: Urinary tract infection, Antibiotics, Common Bacteria, sensitivity.

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INTRODUCTION

Urinary tract infection (UTI) is the second most common infectious complaint in geriatric clinics overall, and the most common outpatient complaint caused by bacteria.[1] The diagnosis and treatment of UTI in the elderly is not the same as treating UTI in adults[2,3].

While increased frequency and dysuria are usual symptoms of UTI, uncertainty looms around the same as these symptoms can be masked by catheterization, or be common and chronic in the elderly even in the absence of UTI.[5-10] Fever was the most common symptom of UTI in the present study as with similar studies worldwide.[11-13] Studies have found that the elderly do not lack a febrile response; that an elevated temperature was the most common initial symptom, a marker for a serious infection, and the most important clinical indicator for antibiotic treatment[15]. Whitelaw et al reported that a delay in interpreting fever as a symptom of UTI led to a high mortality rate in the elderly within 24 hours of admission[6]. In older men the incidence of complicated UTI rises dramatically (15-20%).[5,6] The risk factors for complicated UTI are enlargement of the prostate,[7] prostatism, immunosuppression,[8] advance age, functional and anatomical abnormailities,[9] urinary stones,[10] stricture, foreign bodies,[11] instrumentation[12] and surgery of the urinary tract. American and European guidelines shows that there is increase use of Fluroquinolones empirically rather than Trimethoprim/Sulfamethoxazole, to treat UTI[13].

In a study by Ali L et al, the gram-negative rod E-Coli was the most frequently encountered microorganism in 54 (77%) in hospital acquired complicated UTI and it was responsible in 49 (83%) cases in community acquired UTI. Regarding the resistance, Ciprofloxacin was found resistant in 26 cases (37%) in hospital acquired and 18 (30%) in community acquired UTI. The injectable antimicrobial like amikacin and cefoperazone plus sulbactum had an excellent coverage for the majority of uropathogens in complicated UTI.[13]

In one study on patients with UTI, the most isolated bacterium was E. coli with frequency rate of 59%. The other bacteria were Klebsiella spp. (11.6%), Enterobacter spp. (9.8%), Pseudomonas spp. (7.2 %). All Gram-negative bacteria were more sensitive to amikacin (90.5-100%). The Gram-positive cocci isolated were more sensitive to tobramycin, kanamycin and ciprofloxacin (100%)[16]. In another study of UTI on male patients, Escherichia coli was most frequently isolated (48%), followed by other enterobacteriaceae (24%) and enterococci (9%). The etiology of infection was age-dependent; E. coli was more frequently isolate ed in younger patients and Pseudomonas aeruginosa in the elderly[17]. In anoth-

er study, E coli was most frequent isolate (66%) followed by Klebsiella Pneumonia (8.8%) and Enterococcus fecalis (5.5%) among elderly patients with UTI[18].

MATERIAL & METHODS

This descriptive cross sectional study from Feb 2015 to Feb 2016. The study will be carried out in the outpatient department of Urology, Institute of Kidney Diseases (IKD), Hayatabad Medical Complex, Peshawar. All the male patients were included in the study with culture proven complicated UTI over the age of 65 years. While those patients with immunocomprised states i.e diabetes, HIV/AIDS, patients on steroids (on medical records & history), Patients with history of antibiotic intake in the last one week were excluded from the study.

The study was conducted after approval from hospitals ethical and research committee. All patients with complicated UTI and presenting to OPD were included in the study. The purpose and benefits of the study were explained to the patient and a written informed consent were obtained.

All patients were subjected to complete history and clinical examination followed by routine baseline investigations. From all the patients, a two specimen of clean mid stream urine (02 hours apart) were obtained and sent to hospital laboratory and were inoculated on Mackonkey agar, Mannitol salt agar, triple sugar iron agar and melezitose and 3-hydroxy-butyrate to detect Escherichia coli, Pseudomonas aeruginosa, enterobacter and Klebsiella. The organism detected were checked for sensitivity against commonly used antibiotics as ceftriaxone, ciprofloxacin, co-amoxiclav, erythromycin, nitrofurantoin and ampicillin. All the culture and sensitivity procedures were done under supervision of same consultant microbiologist having minimum of five years of experience.

All the above mentioned information including name, age, sex were recorded in a pre designed proforma

and strictly exclusion criteria were followed to control confounders and bias in the study results.

Data were stored and analyzed in SPSS version 10. Mean ± SD was calculated for quantitative variables like age. Frequencies and percentages were calculated for categorical variables like common bacteria (Escherichia coli, Pseudomonas aeruginosa, enterobacter and Klebsiella). Stratification were done to stratify the Common bacteria among age to see the effect modifications. All results were presented in the form of table and graphs.

RESULTS

In this study, 193 male patients with culture proven complicated UTI over the age of 65 years were included and the culture were done.

Patients age was divided in three

categories, out of which most presented with culture proven complicated UTI were of age less than or equal to 70 years which were 115(59.6%) while 47(24.4%) patients were in the age range of 71-75 years and 31(16.1%) were of age range more than 76 years. The study included age ranged from 66 to 81 years. Average age was 70.76 years ± 4.48SD.

Distribution of antibiotic sensetivity in patients having urinary tract infection shows that Co-amoxiclav and ampicillin were sensitive in majority of complicated UTI paitents which were found in 61(31.60%) each, followed by ceftriaxone in 59(30.6%), ciprofloxacin was observed in 49(25.4%) patients while 56(29%) patients have shown sensitive to erythromycin. (Fig 1)

Distribution of common bacteria in patients having complicated urinary tract infection shows that Esche-

TABLE 1: DISTRIBUTION OF MIRCO ORGANISM

		Count	Percentage
E Coli	Yes	77	39.9%
	No	116	60.1%
Klebsiella	Yes	66	34.2%
	No	127	65.8%
Pseudomonas Aereginosa	Yes	73	37.8%
	No	120	62.2%
Enterobacter	Yes	69	35.8%
	No	124	64.2%

TABLE 2:ANTIBIOTIC SENSITIVITY OF COMMON BACTERIA

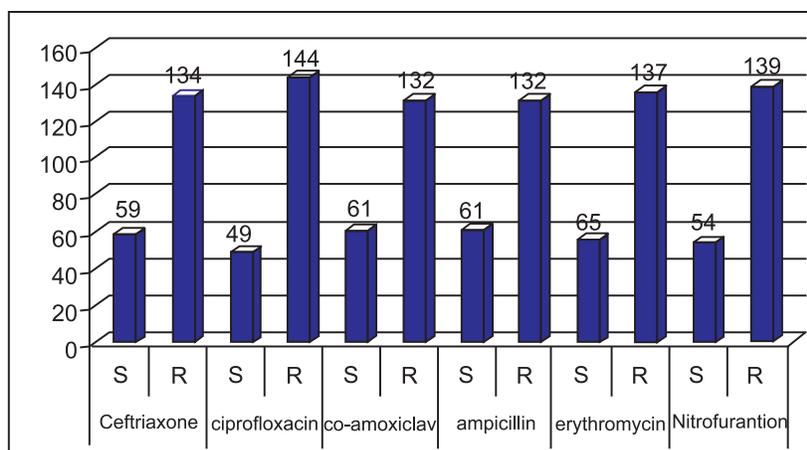|		E Coli	Klebsiella	Pseudomonas Aereginosa	Entero-bacter
Ceftriaxone	S	53.2%	65.2%	68.5%	62.3%
	R	46.8%	34.8%	31.5%	37.7%
ciprofloxacin	S	54.5%	53.0%	52.1%	58.0%
	R	45.5%	47.0%	47.9%	42.0%
Co-amoxiclav	S	63.6%	66.7%	67.1%	66.7%
	R	36.4%	33.3%	32.9%	33.3%
ampicillin	S	61.0%	72.7%	68.5%	68.1%
	R	39.0%	27.3%	31.5%	31.9%
erythromycin	S	55.8%	62.1%	65.8%	62.3%
	R	44.2%	37.9%	34.2%	37.7%
Nitrofurantoín	S	46.8%	59.1%	64.4%	65.2%
		53.2%	40.9%	35.6%	34.8%

S=Sensitivity   R=Resistant

Figure 1: Antibiotic sensitivity distribution

richia Coli was found in majority of cases which is 77(39.90%), followed by psedudomonas aereginosa in 73(73.8%), klebsiella was observed in 66(34.2%) patients while 69(64.2%) patients have enterobacter. (Table 1)

Age wise distribution urinary tract infection shows that old age is more prone as that of younger age and common bacteria shows that Escherichia coli was also found in majority of the patients having age more than 76 years which was 48.4% followed by patients having age 71-75 years of age with 44.7% and 35.7% Escherichia coli was found in less than or equal to 70 years of age. Similar pattern have been followed approximately by the Klebsiella, pseudomonas aerginosa and Enterobacter.

The antibiotic sensitivity of common bacteria shows that ampicillin was more sensitive while ciprofloxacin was more resistant in different micro-organism. The rest of antibiotics sensitivity and resistant has given in (Table 2).

DISCUSSION

UTI is frequently encountered in patients with diabetes and in those with structural and neurological abnormalities, which interfere with urinary flow. The prevalence of antimicrobial resistance in both out and hospital patients with UTI is increasing and can vary according to geographical and regional location.19

Increasing frequency of prostate disease in males are responsible for increasing the incidence of UTI in elderly patients[20].

The mechanisms which potentially contribute to UTI in these patients are defects in the local urinary cytokine secretions (IL-8, IL-6), increased adherence of the microorganisms to the uroepithelial cells, partly due to a changed and lowered Tamm Horsfall protein, and granulocyte dysfunction, possibly as a result of an abnormal intracellular calcium metabolism.[21,22] On the other hand, hyperglycemia facilitates the colonization and growth of variety of organism.[23]

E. coli was the predominant bacteria found in our study, Isolation of Escherichia coli as the predominant pathogen of community associated UTI has been extensively reported in many studies.[24,25] Although, the decline in E. coli isolation (55.1%) rate in our setting remains unclear. But, similar low rate isolation E. coli have also been reported by investigators from developed and developing countries[26].

One another study also show that the most common organisms causing UTI are E. coli while Proteus, Klebsiella, Streptococcus and Staphylococcus epidermis also commonly the causative agents.[27] Both in community and hospital settings, antimicrobial resistance among uropathogens causing urinary tract infections is also increasing.[28] E. coli is the most frequently found bacteria in UTI patients from both these settings which accounts for 80-90% of UTI cases.[29,30]

Similar result was found by S. Manikandan et al (2011)[31,32] showed that E.coli was 31.5% predominant in their study. The multiple antibiotic resistant indices (MARI) calculated for E. coli was 0.61, 0.69 and 0.46. This study was correlate with the study of D.H. Tambekar et al (2006)[33] who found that the MARI of E.coli was 0.85, 0.52 and 0.38. E. coli was highly resistant to Gentamicin (90%, MARI – 0.069), Ciprofloxacin (80%), Penicillin (80%, MARI – 0.061) and Ceftriaxone (80%, MARI – 0.061). The overall rate of resistance against E.coli was worldwide reported which was similar with the study of Mandal et al. (2001)[34] showed E. coli as the commonest cause of UTI and antibiotic resistance was high among the strains, which emphasize the need for judicious use of antibiotics. Certain virulence factors like haemolysin production and presence of fimbriae in the E. coli may be associated with urovirulence.

H. Tambekar et. al.,[33] (2006) who found that MARI for S.aureus was 0.61. S. aureus showed 75% resistance to Methicillin, Oxacillin, Vancomycin, Gentamincin, Tetracyclin and Penicillin and their MAR indices for antibiotics was found to be 0.057. The MAR indices for Ps. aeruginosa were1.0, 0.8 and 0.6, Ps. aeruginosa was highly resistant to Ampicillin (100%) antibiotics with MARI was 0.076 whereas this organism also 80% resistance to Ceftriaxone, Gentamincin, Norfloxacin and Tetracyclin with MAR index was 0.061. The highest MAR indices for Proteus vulgaris were found to be 0.46 and these bacteria was resistance to Tobramycin (80%) antibiotic. This bacteria also showed high resistant to Ciprofloxacin, Sparfloxacin and Penicillin. This study showed some similarities with the study of Kolawale AS et. al (2009)[35]. Kl. Pneumoniae and Serratia marscences showed similar results with antibiotics resistance. Both the bacteria were 50% resistance to 4 to 5 antibiotics whereas Serratia marscences showed 100% resistance to Penicillin antibiotics with their MAR index 0.076. This study was comparable with the study of El-Mahmood Muhammad Abubakar (2009)[36].

Resistance rates among common uropathogens to many commonly used antimicrobial agents have increased over the years and theses

resistance rates vary from country to country.[37] In our country set up the least effective drugs are amoxicilline–clavulanic acid, tetracycline, trimethoprim-sulfamethoxazole and ampicillin[37].

CONCLUSION

The bacterial susceptibility and resistance profile of all isolates in this study have shown that ciprofloxacin, ceftriaxone, gentamycin remain the most effective drugs against pathogens. The present study confirms that bacterial resistance would be a greatest problem in the country. Finally, we suggest that empirical antibiotic selection should be based on knowledge of the local prevalence of bacterial organisms and antibiotic sensitivities rather than on universal guidelines.

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RISK FACTORS AND COMPLICATIONS OF PLACENTAL ABRUPTION AMONG PATIENTS PRESENTING WITH ANTEPARTUM HEMORRHAGE

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ABSTRACT

BACKGROUND: Ante partum hemorrhage is defined as bleeding from genital tract occurring from twenty four weeks of gestation till the end of pregnancy. This study was conducted to determine the frequency of placental abruption, its risk factors and complications among patients with anti partum haemorrhage.

METHODS: This descriptive cross section study was conducted at Obstetrics and Gynecology Department, Khyber Teaching Hospital, Peshawar, from 26-07-2011 to 01-05-2013. 334 patients were included in the study, using WHO software for sample size estimation. Permission was taken from the hospital ethical committee. Data was collected from all those patients who were received with ante partum hemorrhage. Examination including general physical examination, abdominal and obstetrical examination was done. All those patients among whom placental abruption was detected, were followed throughout pregnancy and labour including postpartum period to detect the occurrence of postpartum hemorrhage.

RESULTS: Frequency of placental abruption among patients presenting with antepartum hemorrhage was 20.7%. mean age of the patients was found to be 29 years. Mean period of gestation was almost 32 weeks. Gravidity was more than 4 and parity was found to be 3. Postpartum hemorrhage was found in 3% of the patients.

CONCLUSION: Abruptio placentae represents a potentially serious obstetric problem that tends to threaten maternal health. It leads to serious maternal complication of postpartum hemorrhage.

KEY WORDS: Antepartum hemorrhage, Placencental abruption, and Postpartum hemorrhage.

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INTRODUCTION

Ante partum hemorrhage is defined as bleeding from genital tract occurring from twenty four weeks of gestation till the end of pregnancy[1]. It occurs in 0.5 to 5% of all pregnancies and is one of the most common emergencies in obstetrics[2]. Placental abruption is one of the leading causes of third trimester bleeding[3]. In 30% of the cases third trimester bleeding is due to placental abruption[4]. Placental abruption is defined as bleeding following premature separation of normally attached placenta from twenty four weeks of gestation to the delivery of the baby[5]. It can lead to considerable maternal and perinatal morbidity and mortality.

The maternal effects depend upon its severity[7]. These are hemorrhagic shock, generalized coagulopathy and ischemic necrosis of the organs like kidneys, hepatic, adrenal and pituitary, uterine apoplexy or couvelaire uterus which leads to postpartum hemorrhage[7].

There are two forms of placental abruption depending upon whether the type of hemorrhage is concealed or external. Concealed hemorrhage occurs in 20% of the cases in which the hemorrhage is confined to the uterine cavity; placenta may be completely detached and in this case complications are usually sever. Most common complications in this case are coagulopathy and fetal death. External hemorrhage occurs in 80% of the cases. In this case blood comes out through cervix, detachment of placenta may be incomplete and complications are less severe. In rare cases placenta may be separated only at the margin, here most common complication is the preterm labor[8].

The frequency of placental abruption was found to be 4.4% in a study performed in department of Gynecology and Obstetric unit B of Ayub Teaching hospital Abbotabad, postpartum hemorrhage occurred in 18.9%[9].

Although in majority of cases the causes of placental abruption are known but still its increased frequency is an issue of concern for obstetricians[9].

Antepartum hemorrhage is not uncommon in our population and placental abruption if left undiagnosed can lead to complications like cesarean section,premature rupture of membranes and postpartum hemorrhage.

This has compelled me to carry out this study to develop local statistics of placental abruption along with its common maternal complications. The results are shared with gynecologists and obstetricians and suggestions are made for timely and proper management of patients with placental abruption.

MATERIAL & METHODS

The study was conducted in Obstetrics and Gynecology Department, Khyber Teaching Hospital, Peshawar

from 26-07-2011 to 01-05-2013. Total 334 patients were included in the study according to the sample size under WHO software for size determination. Permission was taken from the hospital ethical committee. All pregnant women presenting with antepartum hemorrhage after 28 completed weeks of gestation and before 37 completed weeks of gestation, of age group 15-45 years and of any gravidity and parity were included in the study.

Exclusion Criteria was patients having History of genital tract trauma during delivery. Retained placenta for more than 30 minutes and uterine inversion detected on physical examination leading to postpartum hemorrhage.

Data was collected from all those patients who were received with antepartum hemorrhage. An informed written consent was taken from all the patients or their relatives. A detailed history about the age, parity, and period of gestation, booking status, obstetrical and past surgical and medical history was taken. Examination including general physical examination, abdominal and obstetrical examination was done. All those patients in among whom the placental abruption was detected was followed throughout pregnancy and labour including postpartum period to detect the postpartum hemorrhage. All the observations were done under supervision of an expert obstetrician.

All the ultrasounds were done through expert sonologist and strict exclusion criteria was followed so that to control confounders and bias in our study results.

All collected information was analyzed via software SPSS version 10. Means±standard deviations were calculated for continuous variables e.g age, parity.

Proportions and frequencies were calculated for categorical variables like placental abruption and its complication i.e. postpartum hemorrhage. Results were presented in the form of tables.

RESULTS

DISCUSSION

The result of present study indicates a much higher than expected frequency of abruption placenta in our setting. This is comparable to a study carried out in india where the incidence of placental abruption was 29.5% among patients presented with antepartum hemorrhage[10]. We have

TABLE 1: DESCRIPTIVE STATISTICS (N=334)

	N	Minimum	Maximum	Mean	Std. Deviation
Age	334	16.00	42.00	29.0599	6.06986
Parity	334	.00	13.00	3.0000	2.53030
Gravida	334	1	15.00	4.4401	2.78903
Period of gestation	334	28.00	36.00	32.9611	2.77618

TABLE 2: FREQUENCY OF PLACENTAL ABRUPTION AND PPH

		Count	Percentage
Placental abruption	Yes	69	20.7
	No	265	79.3
PPH	Yes	10	03.0
	No	324	97.0

TABLE 3: AGE GROUPS * PLACENTAL ABRUPTION AND PPH

		Age (in years)							
		<= 20.00		21.00 - 30.00		31.00 - 40.00		41.00+	
		%	Count	%	Count	%	Count	%	Count
Placental abruption	Yes	21.2%	7	16.6%	29	26.6%	33	.0%	0
	No	78.8%	26	83.4%	146	73.4%	91	100.0%	2
PPH	Yes	9.1%	3	.6%	1	4.8%	6	.0%	0
	No	90.9%	30	99.4%	174	95.2%	118	100.0%	2

TABLE 4: PARITY GROUPS * PLACENTAL ABRUPTION, AND PPH

		Parity					
		<= 5.00		6.00 - 9.00		10.00+	
		%	Count	%	Count	%	Count
Placental abruption	Yes	18.5%	51	30.2%	16	40.0%	2
	No	81.5%	225	69.8%	37	60.0%	3
PPH	Yes	2.5%	7	5.7%	3	.0%	0
	No	97.5%	269	94.3%	50	100.0%	5

TABLE 5: PERIOD OF GESTATION GROUPS * PLACENTAL ABRUPTION & PPH

		Period of gestation			
		<= 32.00		33.00+	
		%	Count	%	Count
Placental abruption	Yes	22.9%	33	18.9%	36
	No	77.1%	111	81.1%	154
PPH	Yes	1.4%	2	4.2%	8
	No	98.6%	142	95.8%	182

a higher frequency because being a tertiary care unit we receive high risk cases and also because of illiteracy our patients have no concept of antenatal check up so that high risk cases can be identified in time. It can be said that the frequency obtained in this study is representative of this province.

Advanced maternal age and multiparity have been associated with an increased risk for placental abruption. However, they often are interrelated, and studies have produced inconsistent results. Although some studies have found women of advanced maternal age (but not parity) to be at an increased risk for abruption,[11,12,13,14]. Others have demonstrated that parity plays an important role in the etiology of placental abruption[15,16]. On the contrary, the U.S. Perinatal Collaborative Project performed from 1959 to 1966 and a population-based study failed to show a relationship between placental abruption and either maternal age or parity[17].

There is relatively high risk of placental abruption with increasing maternal age. Mean age of patient with placental abruption in my study is 29 years. This is comparable to a study carried out in Hyderabad Sindh where placental abruption is more common in young age group i.e. mean age of less than 25 years[18]. However studies carried out in Finland shows increase incidence in patients with advanced maternal age of more than 35 years[19]. Younger mothers fronting the dilemma of placental abruption may be an indicator of unique socioeconomic barriers faced by these young women in accessing skilled care.

Multiparity is considered as a risk factor for placental abruption. In 1996, Ananth and colleagues demonstrated by using population-based cohort data from Nova Scotia, Canada those young, multiparous women (aged 20–24 years and parity of 3 or higher) were at a 3.2-fold increased risk for abruptio placentae compared with nulliparous women aged 25–29 years[20]. In my study most of the patients has parity of 6 or more. Multiparity particularly grandmultiparity has been specified as a factor predisposing to increased frequency of pla-

cental abruption. This is comparable to a study carried out in Abbottabad where the multiparous and grand multiparous women were 49% and 39.6% respectively[9]. So present study supports multiparity as a risk factor for placental abruption. This may be because of the reason that increasing parity may be giving a sense of false scrutiny to these patients on the view of previous uneventful deliveries and they are unaware of the problem that they can face because of increasing parity. This is contrary to the state in developed countries. A study in Thailand showing increase incidence in primigravida which was 52%[21].This may be due increase trend of smoking and stress in pregnant patients which are the important contributory factors in the development of placental abruption.

In my study maternal complications associated with placental abruption was PPH. 3% of patients went into PPH. In Thailand 2.9% patients went into hemorrhagic shock.16.5% of PPH was due to couvelaire uterus[21]. This is comparable to a study carried out in Hyderabad in which the frequency of PPH was 3%[19]. It is a potentially life threatening complication of placental abruption and is the leading cause of preventable deaths world. It causes maternal morbidity in developed countries and is the leading cause of death in developing countries. If not managed properly and timely patient can develop complications like hypovolumic shock acute renal failure and even death. Those who survive may become anemic and fatigued which may make maternal care of the newborn difficult. Patient may develop Sheehan's syndrome and failure of lactation and infertility.

CONCLUSION

To conclude, there is no doubt that abruptio placentae represents a potentially serious obstetric problem that tends to threaten maternal health and wellbeing. Postpartum hemorrhage is a serious complication which occurred in 3% of the patients presented with postpartum hemorrhage. Increasing maternal age, grand multiparity are the risk factors adding to the increased rates

of placental abruption. More women prefer and seek care at primary health centers, TBA, and home deliveries which are affordable but more risky. It is essential that all efforts should be made to prevent the occurrence of this condition and its complications in the first place. Maternal prognosis may improve if antenatal, intra-partum care is available near women's home and are affordable. Continued education should be provided to the staff in providing care so that they are able to recognize the problem in time and refer to higher centers.

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COVERAGE OF IMNCI IN DISTRICT ABBOTTABAD, PAKISTAN

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ABSTRACT

BACKGROUND: IMNCI is a systemic approach to children's health, which focuses on the child as a whole, rather than on a single disease or condition. This study focuses on the coverage of IMNCI in terms of trained staff, their knowledge and practice and resource availability in district Abbottabad.

METHODS: All trained staff, 23 in number, from 16 randomly selected Basic Health Units (BHUs) were studied from 10 March to 9 Septmber 2015. A self administered questionnaire was provided to the health care workers of randomly selected BHUs to assess their knowledge, practice and resources regarding IMNCI. Results were calculated as frequency using SPSS version 20.

RESULTS: 17 BHUs were visited out of which the medical officer incharge of 1 BHU was not willing to participate. 2 BHUs did not even have a single trained health care worker. Out of total 23 respondents 5 were doctors, 6 were lady health visitors and 12 were medical technicians. Over all knowledge and practice of IMNCI among respondents was good but still some respondents failed to communicate their knowledge and practice.

CONCLUSION: Very few health care workers lack knowledge regarding IMNCI. This issue needs to be addressed through appropriate training workshops and seminars, developing and strengthening skills, competencies and capacity building by the management.

KEY WORDS: WHO, UNICEF, Health Care Worker.

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INTRODUCTION

Every year about more than 10 million children die before reaching their fifth birthday[1,2], mostly from pneumonia, diarrhea, malaria, measles and also underlying malnutrition[3,4,5,6,7] in developing countries. Out of these 10 million, 4 million deaths account for neonates (0-27 days)[8,9,10] and remaining 6 million account for children between 1 month to 5 years[9].

Infant and child mortality are the signs of inequity and poverty. Experience and evidence show that rather than focusing on complicated and high cost technology, one should focus on effective strategy that can improve not only this current mortality situation but also work for the betterment of health system as well as take into account the traditions and beliefs in a community.

Thus in 1996 World Health Organization (WHO) and United Nation International Children Emergency Fund (UNICEF) collaborated and used above mentioned findings to develop and promote evidence based simple, effective, low cost, strategy called Integrated Management of Childhood Illness (IMCI)[2,7,8,11]. This strategy was expanded in India and Pakistan as well to include all neonates and was renamed as Integrated Management of Neonatal and Childhood Illness (IMNCI)[11,12,13]. IMNCI is a systematic approach to children's health, which focuses on the child as a whole, rather than on a single disease or condition[12].

IMNCI strategy includes preventive and curative plans to reduce the child mortality and also work for the improvement of health system[7].

A multi country evaluation (MCE) for IMNCI began in 1997[3] to find out the nutritional, behavioral and mortality impact of this strategy and also measure its low cost-effectiveness. MCE-IMNCI included Bangladesh, Brazil, Peru, Tanzania and Uganda. By the end of 2004, a total of 100 countries reported having completed a national adaptation of the IMNCI case management guidelines for first-level health facilities.

South-East-Asia lack socioeconomic and health indicators due to which this area accounts for one-third[14] of world's mortality of neonates and children under age of 5 years. Pakistan is one of these South Asian countries where IMNCI was introduced in 1998[13]. Since then a lot of hard work has been done by Paediatricians and health workers to implement this strategy in the present health system.

Before IMNCI was introduced the world mortality rate was very high and other strategies were not working up to the mark but IMNCI made a remarkable change in this condition. Even though IMNCI is a better strategy there are still deficiencies in its implementation. Health workers (Paediatricians, medical officers, lady health workers, health technicians, and dispensers attached to IMNCI implementing facilities) are not properly trained and lack knowledge about case management according to IMNCI protocol.

The purpose of exposing the idea of following the IMNCI strategy worldwide is that it presents an opportunity for different countries to update the policies for case management of sick children, because it acts as the catalyst for identification of substantial weakness in the world. Although IMNCI consultations take longer, IMNCI has shown to be efficient and low cost than routine

care in some settings. This study was conducted to assess the knowledge and practices of health care workers regarding IMNCI and availability of IMNCI resources like recording forms, chart booklets, human resource, Vitamin A and Oral Rehydrating Salt (ORS) at BHUs in District Abbottabad.

MATERIAL & METHODS

This Descriptive cross-sectional study was conducted over a period of six months (10th March -9th Sept 2015) 17 out of 55 (30%) Basic Health Units (BHUs) from district Abbottabad were selected through systematic random sampling from each of the two tehsils. All the health care workers who were trained in 11 days IMNCI training program were included. All individuals from a specific health facility where incharge did not consent, were excluded. Those trained health workers who refused to participate were also excluded. A total of 16 BHUs and 23 HCWs were studied. A structured questionnaire and a check list were used for data collection.

Data were analyzed using SPSS version 20. Ethical approval was granted by Ethical Committee of Women Medical College Abbottabad.

DISCUSSION

IMNCI is a systemic approach that focuses on the health of children. This protocol does not involve any expensive equipment's or medication that a developing country will not be able to afford. It only requires the practice and knowledge of the workers in this system[6]. Majority of the trained participants in this research were Medical Technicians and only few were doctors (Fig 1). Usually doctors turnover is more frequent than other auxiliary staff because of promotions, higher education and being influential to join the health facility or offices of their choice[15]. More than half of the study participants had correct knowledge and practice of the IMCI protocol. Though very few participants could not understand some important protocols like diarrhea management plan, this could not be explained quantitatively but should be considered as an important issue. If a single person is not able to classify and manage a condition, it will put many children at risk.
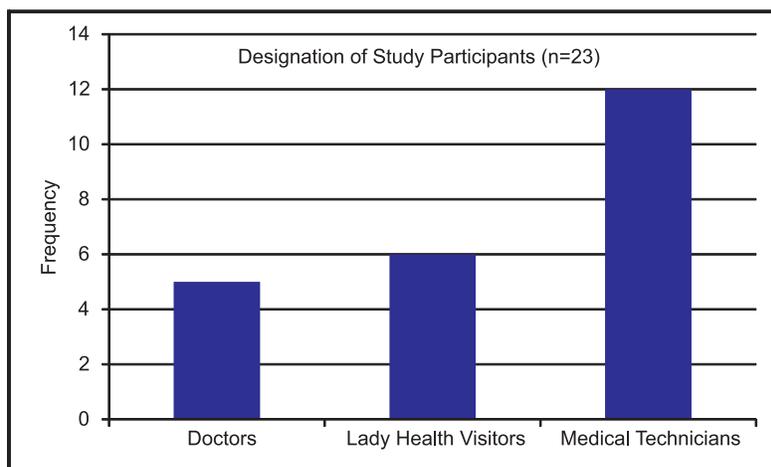
Along with the assessment of knowledge and practice of health care workers in different BHUs, we also assessed the availability of resources in selected sixteen BHUs. Non availability of Vit A, chart booklets and Malaria supervisor were main issues identified. Medical Officer (MO) is the head of a BHU and his presence in working hour is mandatory. Out of all BHUs that we visited, MOs were present in only 9 BHUs during duty time. Chart booklet for IMNCI has all the basic information about IMNCI like classification and treatment. Only eight, BHUs had chart booklets.

Malaria is one of the diseases that is being dealt by the IMNCI strategy that is why malaria supervisor should be available at all times in a BHU and according to our research only six BHUs had malaria supervisor. ORS is an important part of treatment plan for dehydration associated with diarrhea .Only twelve BHUs had sufficient quantity of ORS. While sufficient quantity of Vitamin A was available only in half of the BHUs.

Figure 1:

TABLE 1: KNOWLEDGE & PRACTICES OF HEALTH CARE WORKERS REGARDING IMNCI PROTOCOL(N=23)

Question/activity	Correctly identified/performed	Failed to identify/perform
Identification of a danger sign	15	8
Interpretation of Red, Yellow and Green colors on chart booklet	22	1
Treatment plans for No, Some and severe dehydration	14	9
Identification of pneumonia	17	6
Counsels the mother	22	1
Follow up time for Malaria	12	11

TABLE 2: RESOURCES AVAILABILITY AT BHUS(N=16)

Resource detail	Yes	No
Medical officer present in the BHU at the time of Visit	9	7
IMNCI chart booklets available	8	8
Malaria Supervisor present	6	10
Sufficient quantity of ORS	12	4
Sufficient quantity of Vit A	8	8

IMNCI training should be made mandatory for the medical officers before appointing them in the BHUs as they are mostly responsible for under five consultations. Also more malaria supervisors should be appointed in BHUs. Refresher seminars and workshops on IMNCI for health care workers should be held more frequently as to keep their knowledge up to date.

CONCLUSION

BHUs are meant to provide primary health care that is why basic facilities and health care workers fully trained in IMNCI should be available in BHUs at all time. In our research we observed that among all the health care workers of BHUs, medical technicians were mostly trained but medical officers on the other hand were not trained. Availability of basic resources and facilities in BHUs were rather satisfactory. In most of the BHUs medical officers and malarial supervisor were not even appointed.

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LEVEL OF SATISFACTION AMONG PATIENTS ATTENDING BASIC HEALTH UNITS IN ABBOTTABAD

Sabih Zainab[1], Saima Manzoor✉, Omaima Gul[1]

ABSTRACT

BACKGROUND: Over the last two decades Basic Health Units have been emphasized as key outlets for Primary Health Care services in the rural areas of country. Patient's satisfaction have long been considered as important components when measuring health outcome and quality of care. This study was conducted to know the level of satisfaction among patients attending basic health units.

METHODS: This cross - sectional study was conducted at Basic Health Units (BHUs) Nawanshehr and Dhamtour, Abbottabad from 1st December 2015 to 31st May 2016. Patients who met inclusion criteria were randomly selected from both BHUs on the day of visit and so 89 study participants were selected. Frequencies and percentages were calculated using SPSS -V 20.MS Excel 2007 was used for plotting graphs.

RESULTS: Overall patient had variable experience of attending BHU. Majority of patients (56%) lived in the vicinity of BHU within 5km. As far as the doctor's response was concerned 73% said that response was always good. 61.7% patients agreed that sometimes medicines were available at BHU.

CONCLUSION: Primary health care is a key determinant of overall patient's satisfaction attending BHU. Patient's comments suggest that number of concerns must be addressed and quality of services should be improved.

KEYWORDS: Primary Health Care, Patient's satisfaction, Health Care Facilities

INTRODUCTION

Over the last two decades Basic Health Units (BHUs) have been emphasized as key outlets for Primary Health Care (PHC) services in the rural areas of country[1]. Patient's satisfaction have long been considered as important components when measuring health outcome and quality of care[2]. A satisfied patient is more likely to develop a deeper and longer lasting relationship with their medical provider[3].

Patient's expectations with heath providers and health care system plays a fundamental role in the concepts of patient's satisfaction. Patients experience is a strong predictor of patient's satisfaction. Consumer's Satisfaction is generally considered as the extent to which consumers feel that their needs and their expectations are being met by the service provider. Pakistan government established an extensive network of primary health care facilities to improve accessibilities of the population to the basic health facilities with the main aim of providing equitably effective and accessible health care services at a cost that individuals can afford[4].

The quality of health care services has various aspects which has suggested six keys dimension of quality or attributes of the quality in health care. Among those attributes efficiency delivering health care in a manner which maximizes resource used, accessibility, delivering of health care that is timely, geographically reasonable and patient oriented into account preferences of services users are important attributes affecting patient's satisfaction regarding quality of services delivery[5].

Patients are more satisfied with the health care services, if the health system is responsive in term respect of dignity, autonomy and prompt attention and meeting their expectations. Patient expectations which are influenced by the characteristics such as age, social class, education and to lesser extent gender and ethnicity were found to be important predictor of patient's satisfaction in many surveys. However, patient's perceptions and other psychological factors are potentially neglected determinants. In Pakistan, private health care sectors is somehow responsive as indicated by few studies done in local settings but public sector is severelyunderutilized and there is no concept of quality improvement and quality service provision in government hospitals[4].

Improvement in the doctor patient communication skills and other relevant areas would go long way to enhance the level of satisfaction of the out patients, considering the fact that most of the patients are drawn to the health facility out of their faith in the existing health system[4].

Measurements of patient's satisfactions involves multi dimensions aspects of patient's opinion on health care identifying problems in health care and evaluation of health care[4]. The previous work revealed the majority of patients were satisfied with the quality of services provided to them[6].

A lot of work has been done regarding the evaluation of services being provided at primary health care. In Pakistan, in Khyber Pakhtunkhwa an extensive study was done regarding evaluation of primary and secondary

centers showed that overall patient's satisfaction level was high. The areas of highest patient's satisfaction were respectful treatment and courteous staff, presence of qualified staff, receiving information on the medication prescribed, being told when to return and clean waiting areas[6].

Another study included all three PHC's in Bahour commune. Out patient satisfaction in primary health centers were assessed by pre-designed and pre-tested preformat. Total 200 out patients were interviewed during the study period considering available resource and time. In this (86.5%) out patients attendees were satisfied with the location of primary health centers and (72.5%)were satisfied with the waiting period at these centers (85%) attendees were satisfied with the toilet facilities in PHC's whereas (42%) attendees reported overcrowding in these PHC's and (15.5%) reported about unavailability of safe drinking water[7].

Another clinical analysis in Karachi reviewed that (77%) patients were satisfied with attitude of PHC staff also (75%) reported that doctors had examined them per their complaints and (57%) patients said that doctors had explained about their illness. Majority (76%) of the patients were satisfied with the treatment offered in these PHC'S[7].

Different researchers have shown that the overall satisfaction of the out patients were found to be good, which is consistent with study conducted in Lucknow by Kumri et al. Inquiries about the waiting area and waiting period in the public health facilities also revealed a high level of satisfaction in the studies. They also documented that the accessibilities to the PHC was satisfactory 88.3% which was also shown. However differences in satisfaction in the term of long waiting time, was shown in studies conducted by Van Uden et al and Mahfouz et al could be attributed to the differences in expectations of the people in those study areas.[4]

In a study conducted by Sodani et al satisfaction towards availability of toilet was 44% that in study by Vanluden 85%. However in the same study patient's satisfaction towards the quality of drug at PHCs was only 3%.[4]

The doctor patient relationship is an important determinant of the level of satisfaction. Whereas the studies conducted by Leumari et al and Galhotra et al, the satisfaction towards doctors patients relationship was found to be 60.5% and 65% respectively. Likewise the satisfaction towards behavior of the health staff was found to be 82% and 78.3% respectively by Kumari et al and Sodani et al.[4]

Availability of drugs is one of the main issues that satisfied the patients. Most BHU in far flung areas where the only medicine patients can take are those available at the BHU. A study showed that Chandwani 62% of the attendees of primary health centers were satisfied with the availability of the drugs. Another study by that Chandwani satisfaction towards the "health information" was found to be 69.6% which is similar to above mentioned study.[4]

The maternal mortality and infant mortality rate in Pakistan is still very high in spite of improving our maternal and child health services. Millennium development goal 4 and 5 was to reduce child mortality and improve maternal heath respectively but at the end of 2015 we have not been able to achieve this goal.

So we want to check in this study whether the services provided at BHU regarding immunization, antenatal and postnatal care are adequate or not and the patients are satisfied with

them or not? At the end we want to see whether the services provided by BHU and level of satisfaction of level of patients with them could be a factor of these high mortalities.

MATERIAL & METHODS

This cross sectional study was conducted over a period of 6 months from 1st December 2015 to 31st May 2016. All patients attending the OPD of two Basic Health Units (BHUs), Nawanshehr and Dhamtour, who gave consent were randomly selected. Serious patients, children under 14 years and non willing patients were excluded. A sample of 89 patients was obtained. Interviewer administered questionnaire was used. SPSS version 20 and Microsoft Excel 2007.Confidentiality of the study participants was maintained. Ethical approval was granted by the institutional ethical committee of Women Medical College.
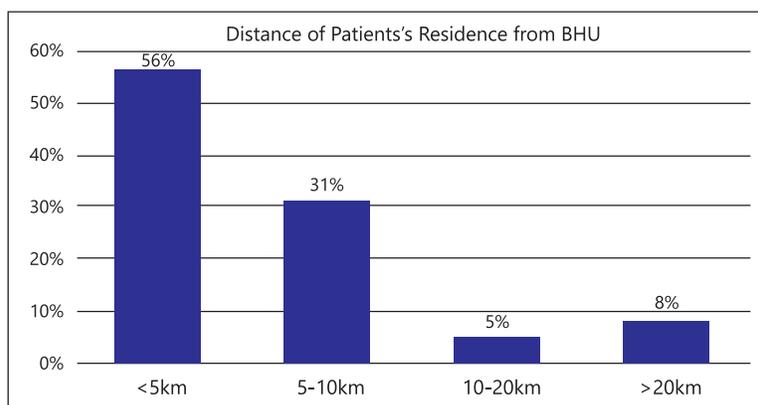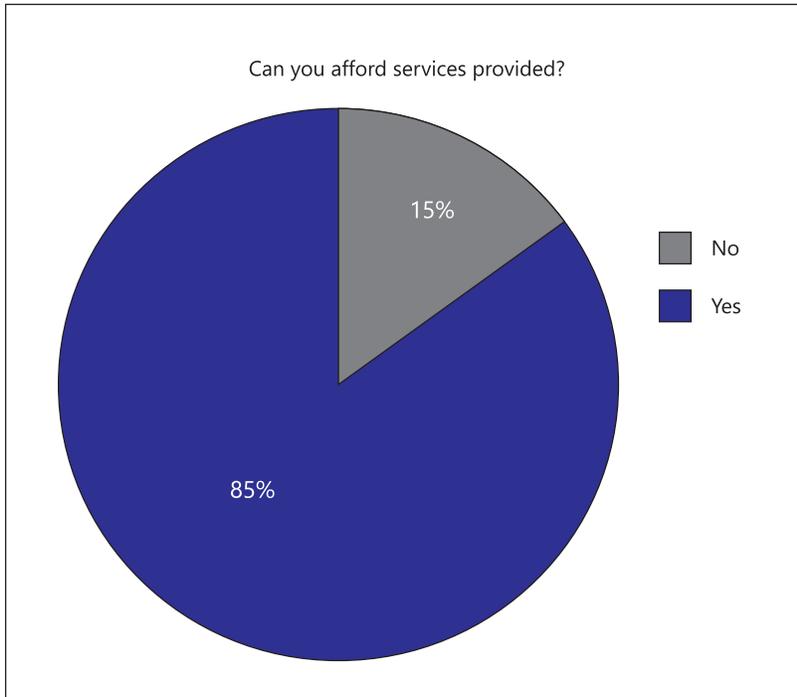
RESULTS

Figure: 1

Can you afford services provided?

No
Yes

15%

85%

Figure: 2

Do you get prescribed medicine?
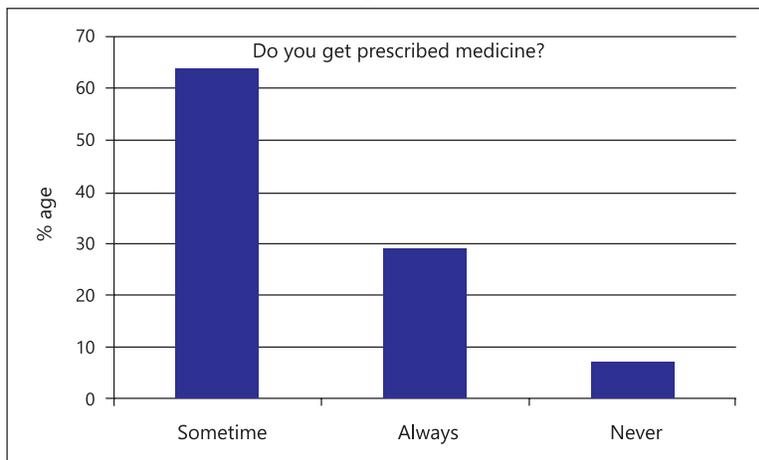

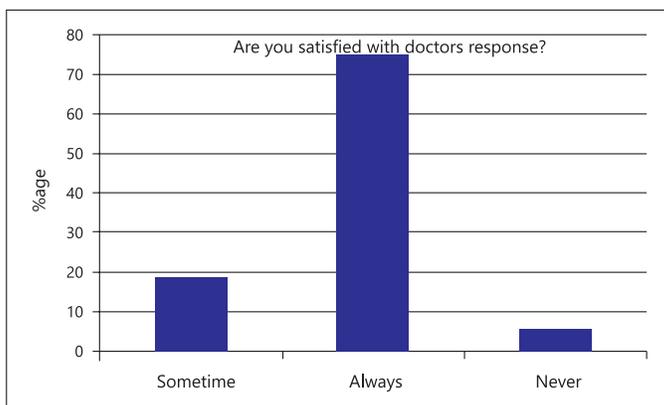Figure: 3

Are you satisfied with doctors response?

Figure: 4

DISCUSSION

Patient satisfaction among those attending BHU is important measure of health care. Characteristics of the health care delivery system, which have been shown to play an important role in patient satisfaction with the health care services are affordability, accessibility, availability and equity. Our study finding may be useful in identifying whether the patients attending the BHU are satisfied from the services or not.

In our study majority of patient (56%) attending the BHU lived in the vicinity of the BHU within 5km and only few patients lived far away from the BHU. This is the similar to the study conducted by Mr, Irfan Ali in which showed that 10% patients had residencies within 3km from BHU, so 60% patients reported they walked to BHU and 17% used public transport.[8] Our study also showed that the majority of patients attending BHU were illiterate. This is also similar to the study conducted by Mr. Irfan Ali who showed that primary health care services are mainly used by illiterate(50%) followed by patients with primary (23%) and secondary education(17%) respectively.[8] The occupational status of patients showed that majority of the patients were LHV's, house wives and maids. Only a small percentage were teachers (11%), farmers (6%) and businessman (1%). This is in contrast to the study conducted by Mr. Irfan Ali showed that of all patients attending BHU's (43%) were agricultural laborers, (23%) were service workers, (17%) were farmers and (6%) had their on small shops.[8]

As far as availability of medicines in BHU is concerned our study showed that (64%) patients reported that sometimes medicines were available for them, (29%) patients reported that medicines were always available while (6%) patients reported that medicines were never available. In a study conducted by Chadwani, 62% of the attenders at BHU were satisfied with the availability of drugs.[7]

About 75.2% patients reported that when they want to discuss any problem with the doctor, the doctor often listen to them carefully. 19%
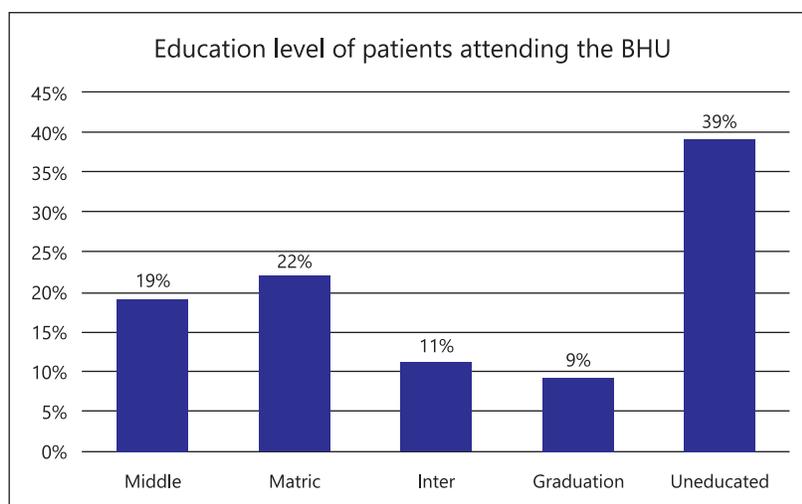
Figure: 5

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patients reported that the doctor sometime listens to their complaints while 5.6% patient complaints that the doctor does not to listen them carefully. This is almost similar to the study conducted by Ragunath E that the satisfaction among doctor patient relationship was 57%. Another study conducted by the Kumari et al and Galthora et al , the satisfaction toward doctor patient relationship was found to be 60.5% and 60% respectively.[7]

In order to satisfy patients attending BHU, there should be sufficient waiting area for the patients that should be clean and well ventilated.

Doctor's response should be such that the patient prefer to visit BHU for their minor ailments.

CONCLUSION

Primary health care is a key determinant of overall patient's satisfaction attending BHU. Patient's comments suggest that number of concerns must be addressed and quality of services should be improved. Prompt attending to patient's expectations, enhancing responsiveness of primary health care system and consideration of patient's perception is of utmost importance to increase patient's satisfaction outcome.

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