

Patterns and Outcomes of Illnesses in Medical Patients Admitted to Holy Family Hospital in a period of Three Months

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^{1,2} Conception of study

^{1,2,3} Experimentation/Study conduction

^{2,3} Analysis/Interpretation/Discussion

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Abstract

Background: Health policy makers often use data describing prevalence, morbidity and mortality to assess the burden, requirements of resources and quality of the healthcare. The aim of this study is to recognize the patterns and treatment outcomes of diseases in a medicine unit of Holy Family Hospital, Rawalpindi.

Objective: To assess the pattern and treatment outcomes of illnesses presenting in a medicine department of Holy Family Hospital, Rawalpindi in period of three months.

Materials and Methods: This descriptive cross-sectional study was undertaken from 1st March to 31st May of 2019, when all the patients admitted in Medical Unit were approached for consent to participate in the study. Data were collected using a self-administered questionnaire-based interview of respondents. Data were analyzed by using Statistical Package for Social Sciences Version 23.

Results: A total of 579 participants were enrolled into the study, out of which 374 (64.6%) were male and 205 (35.4%) were female with mean age 52.23. Majority of participants were admitted via emergency (92.23%). The most prevalent illnesses were chronic renal disease, asthma, decompensated chronic liver disease and stroke; with hypertension being the most common co-morbid condition (6.2%). Of those admitted to the facility, 53.5% patients got discharged after treatment according to advice and 22.5% left the hospital against medical advice. Mortality rate was 23.8%.

Conclusion: Patients with a wide variety of diseases were admitted to the medical unit mainly through emergency. 1 in 5 patients admitted in acute medical unit suffered mortality.

Keywords: Prevalence, Patterns of illness, Co-morbid.

Introduction

Knowledge of disease prevalence and its drivers is extremely important in devising a healthcare plan for any country.¹ As there is a wide variation in the medical conditions in different territories of the world,² these data are crucial for the health policy makers.³

Morbidity and fatality data are essential tools to assess the disease burden and consequently the health quality situation.^{4,5} These patterns show the dimensions of disease prevalence along with the time trends that underline demographic variations in disease burden by age, gender, ethnic status etc.⁶

Medical admissions make up 22-40% of the hospital admissions in developed countries^{7,8} whereas the statistic is up to 81% in the EMRO region according to WHO.⁹ It is generally considered that communicable diseases account for majority of the medical unit admissions in the developing countries, whereas non-communicable diseases (NCDs) are the main reason for admission in developed countries.¹⁰

Although communicable diseases were more prevalent in the last century but recently, non-communicable diseases are the cause of six out of seven deaths in the developed world and half of all deaths in the developing world.^{11,12} This trend had also been reported in previous studies and has been attributed to transition in epidemiology and lifestyles.^{13,14} WHO predicts that non communicable deaths are expected to increase by 17% worldwide between 2010 and 2020. The highest escalation will be in the regions of Africa, South-East Asia and the Eastern Mediterranean, where there will be a rise of over 25%.⁹ According to Centre for Disease Control and Prevention, ischemic heart disease tops the list as the cause of mortality in Pakistan, followed by cancer, lower respiratory infections and stroke.¹⁵

Knowing the pattern of admissions greatly helps the hospital administration and staff in terms of diagnosis, treatment, adequate service provision and cost reduction. It also provides an estimate of disease prevalence and thus facilitates formulation of appropriate preventive strategies. This is the most preferred method for disease prevention in a pragmatic way.^{4,16}

Unfortunately, in Pakistan, data on the treatment outcomes of hospital admissions are either unavailable or incomplete. Therefore, it is essential to assess these patterns with this study to provide a tool for better

planning and appropriate management of prevalent diseases.

The objective of this research is to find the disease pattern and their treatment outcomes managed in medicine ward.

Materials and Methods

Using descriptive cross-sectional research design, data were collected from Medical unit, Rawalpindi for a duration of 3 months from March 2019 to May of 2019. Non-probability convenient sampling was applied as the sampling technique. Ethical approval was obtained by the Institutional Review Board of Allied Hospitals. The study included all the patients admitted to Medical Unit who gave their consent whereas those patients who were admitted to the ER and who did not give their consent were excluded from the procedure. Consent was obtained from the attendants of those participants who did not have the capacity to consent for the study and information was obtained in a similar way.

A self-administered, close-ended questionnaire was used to collect the data from the study participants, which was filled after the interview of patients admitted. Consent was obtained before the interview process. The study participants were asked about socio-demographics and questions related to their disease. They were inquired about their age, gender, residence, marital status and mode of admission. Further questions asked were details of primary disease, secondary disease, duration of hospital stay and follow up was ensured to assess treatment outcome i.e., cured, expired or left the hospital without notice.

These questions were converted into data and organized into variables. Data were analyzed by using Statistical Package for Social Sciences Version 23 and frequencies of the respective variables were assessed.

Results

579 participants were enrolled into this study who were admitted to the Medical Unit. Majority of participants were admitted through emergency department (92.23%), only 7.77% being admitted from the outpatient department.

The mean age of the participants was 52.23± 20.00 which ranged from 13 years to 100 years. 374 (64.6%) were male and 205 (35.4%) were female.

Infectious diseases (27.6%) were the most common cause of admission to the medical ward. The second most common reason for hospital admission was infectious diseases chronic kidney disease (11.7%), followed by cerebrovascular accidents (10.0%) and decompensated chronic liver disease (9.5%). Ischemic heart disease (8.8%) and complications of diabetes mellitus (7.4%) were also among common causes. Table-I describes the commonest infections that resulted in admission of the participants whereas, Table-II describes the commonest causes of non-infectious diseases. The two most common co-morbid conditions included hypertension (22.8%) and diabetes (17.6%). The details with other co-morbid are listed in Table-III.

Table-I Frequency of Infectious Admissions

Sr. No.	Infectious disease	Total Number (n)	Percentage (%)
1	Sepsis	44	7.6
2	Tuberculosis	40	6.9
3	Pneumonia	30	5.2
4	Acute febrile illness	30	5.2
5	Enteric fever	09	1.5
6	H1N1 Influenza	05	0.9

Table-II Admissions with Non-Communicable Diseases

Sr. No.	Non-communicable disease	Total Number (n)	Percent age (%)
1	Chronic kidney disease	68	11.7
2	Cerebrovascular accidents	58	10.0
3	Decompensated chronic liver disease	55	9.5
4	Ischemic heart disease	51	8.8
5	DKA/ HONK/ complications of diabetes mellitus	43	7.4
6	Acute severe asthma	41	7.1
7	Exacerbation of chronic obstructive pulmonary disease	37	6.4
8	Poisoning	22	3.8
9	Anemia	17	2.9
10	Epilepsy	07	1.2

Table-III Incidence of Co-Morbid

Sr. No.	Co-Morbid	Total Number (n)	Percentage (%)
1	Hypertension	132	22.8
2	Diabetes Mellitus	102	17.6
3	Chronic HCV	32	5.5
4	Chronic HBV	18	3.1
5	Heart failure	05	0.9
6	Atrial fibrillation	02	0.3

The hospital-stay of the participants lasted from a minimum 1 day to a maximum 23 days with mean duration of 4.1 ± 3.1 days. About three fourths of the individuals (75.3%) remained in the hospital for up to 5 days. The duration of stay is further described in Table-IV. Mortality in the patients admitted to the medical unit was about 1:5. By comparison, 76% of the participants improved who were either discharged (53.5%) or left without informing/ discharged on request contrary to medical advice (22.5%) as shown in Table-V.

Table-IV Duration of Hospital Stay

Sr. No.	Days in hospital	Total Number (n)	Percentage (%)
1	1-5	436	75.3
2	6-10	113	19.5
3	More than 10	30	5.2

Table-V Outcomes of Diseases

Sr. No.	Outcome	Total Number (n)	Percentage (%)
1	Recovered/improved and discharged	310	53.5
2	Left without informing/ Discharged on request contrary to medical advice	130	22.5
3	Mortality	138	23.8

Discussion

Data were taken through patient interviews of the medical unit of the hospital. The results of this study have shown that communicable diseases are the most common causes of admission to a medical ward in contrary to a study in Bangladesh where Non-Communicable Diseases were two times more than

Communicable Diseases (ratio 2:1).¹⁷ A possible explanation for this difference may be the more prevalence of communicable diseases in Pakistan which accounts for increased admission rates. The major morbidity percentages in hospital were as: chronic kidney disease (11.7%), cerebrovascular accidents (10%), decompensated liver disease (9.5%), sepsis (7.6%), tuberculosis (6.9%) while other causes included pneumonia, acute febrile illness, enteric fever and H1N1 influenza. In comparison a 2005 report issued by the Indian Ministry of health and family welfare¹⁸ which quantifies the top five causes of morbidity in the country to be as follows: Accidents (16.7%), maternal and perinatal diseases (11.6%), cardiovascular diseases (10.0%), mental illness (8.5%), diarrheal diseases (8.2%). These were followed by other causes which included pediatric conditions, malignancies, tuberculosis, HIV/AIDS, malaria and other vector borne diseases, lung diseases, refractive errors and diabetes. Our study had more prevalence of non-communicable diseases as compared to the Indian study. This difference of morbidity can be due to the study population which was taken from medicine wards only as compared to cumulative data from the whole hospital.

According to WHO the most prevalent diseases in Pakistan are ischemic heart disease (8%), cancer (8%), lower respiratory tract infection (8%), cerebrovascular accidents (6%), diarrhea (6%), chronic obstructive pulmonary disease (5%) and tuberculosis (5%). Our study findings were concurrent with the WHO report; any variations are owing to the fact that this study was conducted in the indoor medicine department for three months only while obstetric and pediatric causes of morbidity were excluded. The same is the explanation for the predominance of chronic kidney disease in our study participants. The age of participants in our study ranged from 13 to 100. However, in a study in Southwest Ethiopia, the most recurring age of admission was between 21 to 30 years,¹⁹ this could be identified by the variation in the population constitution of these countries. The higher men to women admission ratio in our study setting is in consonance with many studies carried out in tertiary hospitals of Africa which also report a larger proportion of men attending the hospital and more frequently as compared to women who mostly make hospital visits when complexity set in.²⁰

All national and international studies show that infectious diseases are still the paramount cause of morbidity and mortality in developing countries while the reverse is true for developed countries. The results

of present study conform to the results of studies conducted in other developing countries.

Hypertension is the major cause of admission according to our study findings (22.8%), particularly as a comorbid of chronic kidney disease (CKD), congestive heart failure (CHF) and cerebrovascular accidents. These diseases reported in a Nigerian study have also shown hypertension to be the commonest risk factor.²¹⁻²³ Diabetes is also an associated comorbid in relation to cerebrovascular disease and chronic kidney disease in our patients (17.6%) which is comparable to a study conducted in Lagos in which a substantial percentage of the medical admissions were related to diabetes mellitus: 15% over 12 months and 11.3% over 11 years.^{24,25} Majority of our patients had chronic kidney disease (CKD) in relation to diabetes mellitus and hypertension.

Plan of action focused on adequate control of cardiovascular risk factors; especially hypertension and diabetes mellitus, is aimed to overcome the ever-increasing burden of non-communicable diseases in the society. It involves timely detection, effective treatment and control of the blood pressure and blood sugar, along with prevention of chronic complications and target organs damage. Another component of control is to identify and properly treat lipid disorders, control obesity, promote increased physical activity and give dietary advice. The application of these practices in developed countries have shown to significantly reduce the cardiovascular disease burden.^{26,27}

Conclusion

This study indicated that both communicable and non-communicable diseases accounted for the major hospital admissions in tertiary care hospitals. Participants were admitted to the medical unit mostly through emergency department. More than 1 in 5 patients admitted died.

References

1. Sims N, Kasprzyk-Hordern B. Future perspectives of wastewater-based epidemiology: monitoring infectious disease spread and resistance to the community level. *Environment international*. 2020 Jun 1;139:105689.
2. Zanichelli V, Monnier AA, Gyssens IC, Adriaenssens N, Versporten A, Pulcini C, Le Maréchal M, Tebano G, Vlahović-Palčevski V, Stanić Benić M, Milanič R. Variation in antibiotic use among and within different settings: a systematic review. *Journal of Antimicrobial Chemotherapy*. 2018 Jun 1;73(suppl_6):vi17-29.

3. Ghaffar A, Langlois EV, Rasanathan K, Peterson S, Adedokun L, Tran NT. Strengthening health systems through embedded research. *Bulletin of the World Health Organization*. 2017 Feb 1;95(2):87.
4. Beyene F. Pattern and Outcome of Diseases in Medical Patients Admitted to Asella Hospital, South-East Ethiopia. *Journal of Public Health in Developing Countries*. 2016 Feb 24;2(1):102-8.
5. Steel N, Ford JA, Newton JN, Davis AC, Vos T, Naghavi M, Glenn S, Hughes A, Dalton AM, Stockton D, Humphreys C. Changes in health in the countries of the UK and 150 English Local Authority areas 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet*. 2018 Nov 3;392(10158):1647-61.
6. Huang J, Koulaouzidis A, Marlicz W, Lok V, Chu C, Ngai CH, Zhang L, Chen P, Wang S, Yuan J, Lao XQ. Global Burden, Risk Factors, and Trends of Esophageal Cancer: An Analysis of Cancer Registries from 48 Countries. *Cancers*. 2021 Jan;13(1):141.
7. Ali MA, Arif A, Fatima T, Arif MM. Study of Mortality Patterns among Hospitalized Patients in Public Sector Tertiary Care Hospitals Faisalabad, Pakistan. *Annals of Punjab Medical College (APMC)*. 2017 Jul 26;11(3):238-42.
8. World Health Organization. Global status report on noncommunicable diseases 2014. World Health Organization; 2014.
9. World Health Organization. Global action plan for the prevention and control of noncommunicable diseases 2013-2020. World Health Organization; 2013.
10. Detel R & Breslow L. *Oxford Text Book of Public Health (Current scope & concerns in Public Health)*, 2016; 4th edition, chapter 1.1: page 3.
11. Rahman MM, Kabir MA, Mehjabin M. Pattern of Non-Communicable Diseases among the Admitted Patients in a District Level Hospital of Bangladesh. *Bangladesh Heart Journal*. 2019 Dec 12;34(2):118-21.
12. Hadiza S. Mortality patterns in the Medical Wards of Murtala Muhammad Specialist Hospital, Kano, Nigeria. *Nigerian Journal of Basic and Clinical Sciences*. 2018 Jan 1;15(1):73.
13. Salti N. Non-Communicable Diseases (NCD) in the Middle East and North Africa: What Macroeconomic Savings Can Be Expected from Achieving SDG Target 3.4. Acknowledgements: Non-Communicable Diseases (NCD) in the Middle East and North Africa: what macroecono. 2020 Aug 25.
14. CDC Global Health - Pakistan [Internet]. Cdc.gov. 2020. Available from: <https://www.cdc.gov/globalhealth/countries/Pakistan/>
15. Jamoh BY, Abubakar SA, Isa SM. Morbidity and mortality profile of patients seen in medical emergency unit of a Teaching Hospital in Nigeria: A 4-year audit. *Sahel Medical Journal*. 2018 Oct 1;21(4):213.
16. Rahman MM, Kabir MA, Mehjabin M. Pattern of Non-Communicable Diseases among the Admitted Patients in a District Level Hospital of Bangladesh. *Bangladesh Heart Journal*. 2019 Dec 12;34(2):118-21.
17. Ministry Of Health and Family Welfare, Government of India, New Delhi. National Commission on Macroeconomics and Health Background Papers 2005-Burden of Disease in India, [cited 2009 Feb 25]; Available from: URL: [http://www.who.int/macrohealth/action/NCMH_Burden%20of%20disease.\(29%20sep%202005\).pdf](http://www.who.int/macrohealth/action/NCMH_Burden%20of%20disease.(29%20sep%202005).pdf).
18. A. Elias. Reasons and outcome of admissions, *Ethiop J Health Sci*. 2010.21(2).113-20.
19. Ogun SA, Adelowo OO, Familoni OB et al. Pattern and outcome of medical admission at Ogun State University Teaching Hospital, Sagamu - a three year review. *WAfr J of Med*.2000; 19: (4) 304-308.
20. Amoah AG, Kallen C. Aetiology of heart failure as seen from a National Cardiac Referral Centre in Africa. *Cardiology* 2000;93:11-8.
21. Adekun TA, Akinsola A. Hypertension, induced Chronic Renal Failure: Clinical features, management and prognosis. *West Afr J Med* 1998;17:104-8.
22. Akinwusi PO, Okunola OO, Opadijo OG, Akintunde AA, Ayodele OE, Adeniji AO. Hypertensive heart failure in Osogbo, South Western Nigeria: Clinical presentation and outcome. *Niger Med Pract* 2009;56:53-6.
23. Ogbera O. Burden of diabetic illness in an urban hospital in Nigeria. *Trop Doct* 2007;37:153-4.
24. Ogbera AO, Chinenye S, Onyekwere A, Fasanmade O. Prognostic indices of diabetes mortality. *Ethn Dis* 2007;17:721-5.
25. World Health Organization. *The World Health Report 2002. Reducing risks promoting healthy life*. Geneva: WHO; 2002.
26. Whetton PK, Brancati FL, Appel LJ, Klag MJ. The challenge of hypertension and atherosclerotic cardiovascular disease in economically developing countries. *High Blood Press* 1995;4:36-45.