

EXPLORING AREAS OF IMPROVEMENT IN POSTNATAL CARE SERVICES IN A TERTIARY CARE HOSPITAL IN PAKISTAN

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Abstract

Objective:To assess current quality of postnatal care in tertiary hospital in Lahore to identify areas for further improvement. **Design:**It was descriptive cross-sectional study which employed quantitative method to collect and analyze data. **Setting:**Lady Aitchison Hospital-a tertiary hospital in Lahore. **Population:**Ninety-six maternities admitted in wards of Lady Aitchison hospital during December 2021 to January 2022. **Method:**After IRB approval, consent was taken from mothers selected by random sampling and interviewed using Donabedian framework perform. **Outcome Measures:**Satisfaction with structure, process and outcome of delivery in postpartum mothers were assessed. **Results:**Among 96 mothers, 56% were below 25 years of age, 39% had secondary education, with more than one child (71%) and 57% visited for the first time. Majority of mothers, were given medicine timely (82%) and found attitude (85%) and information (83%) provided by healthcare workers helpful. Their subjective satisfaction rate with staff was 90%. However, there was lack of proper guidelines and facilities for examination, limited counselling of mothers regarding neonatal care and substandard interior of hospitals. Vital steps such as neonatal and maternal abdominopelvic, general and wound examination were left out in up to 30%. Information regarding danger signs of mothers and neonates was not given to 69% and information on family planning was given in only 28%. Contentment with infrastructure of hospital was subpar and it was suggested that sanitary conditions of washrooms and paraphernalia i.e. heaters and beds needed improvement. **Conclusions:**This study suggests that although patients were satisfied by services of healthcare workers, the infra-structure of hospital can be upgraded to provide better quality facilities in terms of air-conditioning, washrooms and well-designed areas for extensive examination of breast, pelvis, abdomen and neonates with introduction of WHO guidelines for postnatal care.

INTRODUCTION

Postnatal care services consist of care given to mother and her newborn for the first six weeks following birth. WHO describes this period as the most dangerous for mother and newborn. Almost half of the maternal deaths occur within the first 24 hours and 66% during the first week¹. Poor care in this time period can increase morbidity and mortality. Globally, more than 500,000 maternal deaths occur due to complications of pregnancy and childbirth (WHO)². Developed countries have an estimated maternal mortality rate of 8-16 per 100,000 live births annually whereas in developing countries the estimate is 237 per 100,000 live births (WHO)³. MMR in Pakistan is 178 per 100,000 live births as estimated in 2015⁴. Maternal mortality is high in Pakistan due to shortage of doctors, nurses and beds at government hospitals.

Research on existing facilities and subsequent audit is the key to identifying improvement areas and subsequently to reduce MMR. A research paper from Dedza district, Malawi⁵ stated that human and material

resources for provision of comprehensive and quality postnatal care services were inadequate. Another research from Mbeya district⁶ concluded that structure and process for provision of quality PNC had gaps and has not been implemented as per guidelines. There were no separate rooms with all facilities, lack of privacy and confidentiality, inadequate infrastructure, insufficient healthcare providers as compared to private hospitals where separate postnatal unit and rooms, high midwife to women ratio and skilled staff was available. According to study conducted in Gambia⁷ there were inadequacies in blood transfusion, essential medicines, accompanied by poor staff attitude and delayed provision of cesarean, inadequate government funding, poverty of patients and shortage of doctors. In India⁸ 39% mothers were moderately satisfied, 60% minimally satisfied and 1% satisfied by services provided by nursing personnel. In Iran⁹ mothers were satisfied with the facilities but less satisfied with workers. A research paper from central Shanghai, China¹⁰ demonstrated that mothers were unsatisfied due to decrease education, training and unavailability of health personnel in emergency conditions. In Kenya¹¹, the introduction of a comprehensive care package in mothers improved the quality of postnatal counseling about infant breast feeding and family planning and upgraded the maternal care index to about 8.72 out of 23. Peer support produced significant reduction in postnatal depression in high risk women¹². Proper educational programs are helpful in reducing unplanned pregnancies.

To address the high MMR in Pakistan, there is a dire need to observe the areas of improvement in postnatal care services to lessen patient traffic to 'dais' and reduce MMR. Hence, the current study was conducted with the objective of exploring in detail the three elements: structure, process and outcome¹³ of maternal healthcare in Lady Aitchison Hospital. This research will help the authorities to formulate the policies to improve health services in developing hospitals.

METHODOLOGY

The study design was cross-sectional descriptive in which quantitative method was used to collect and analyze the data. The study used a questionnaire which was filled by 96 patients at Lady Aitchison hospital, Lahore from December 2021 to January 2022. A questionnaire was designed in the form of three-page proforma and distributed randomly. After approval of Institutional Review Board (IRB) KEMU, Lahore (IRB NO.-226/RC/KEMU), administrative permission from authorities of all relevant hospitals was obtained. Prior to collection research design was explained to the physician on-call. Consent was taken before asking question. Questions were explained to the mothers and filled out in the questionnaire based on Donabedian's¹³ (2005) model. Patient-doctor interaction was not intervened. The patients were selected through simple random sampling.

SAMPLE SIZE: Sample size of 96 patients is estimated by using 95% confidence level, 10% absolute precision with expected percentage postnatal care services as 48%.

$$n = \frac{Z_1^2 \cdot \frac{\alpha}{2} \cdot p \cdot q}{d^2}$$

$Z_1^2 \cdot \alpha/2$ = confidence level 95% - %96

p = prevalence 48%

q = 1-p

d = absolute precision 10%

Strict inclusion criterion to include consenting mothers receiving postnatal care services within 48 hours after deliver was applied and non-consenting mothers and follow-up cases were excluded.

DATA ANALYSIS:

Data was done by entering it in SPSS-22. Quantitative variables like age will be presented as mean SD. Qualitative variables like gender will be represented as frequency and percentage.

RESULTS

The demographic profile of the mothers who were assessed for the postnatal care at Lady Aitchison hospital showed distribution in age, socioeconomic status, education level and number of visits and number of pregnancies. These are shown in figure 1-5. Out of 96 mothers, 56% were between 20-25 years of age, 30% between 26-30 years remaining being above 30. Total 76% mothers had family income greater than 10,000 .Regarding education, 23% had primary, 39% had secondary, 21% had higher education and 17% were illiterate. 57% mothers visited Lady Aitchison hospital for the first time and 26% for the second time. 29% mothers became pregnant for the first time, 34% for the second, 11% for the third, 14% for the fourth, 8% for the fifth and 4% for sixth time.

Quantitative findings: The satisfaction with the different elements of health care have been plotted in figure 6-13. The satisfactory areas of postnatal care included the healthcare workers' performance and the availability of medicines .83% mothers found the information given by the healthcare providers helpful and 85% said that the attitude of healthcare providers towards them was good. Overall 90% of mothers were satisfied with the quality of care by healthcare workers. As regard to availability of medicines, 95% mothers were given medicine timely.

The statistics on the examination done on post-natal patients showed it was sub-optimal keeping in view its significance on patients' management. Although, blood pressure and pulse was regularly taken in 95% and 85% of patients, the temperature was not checked in 31 % of mothers. The general, abdominal, breast and wound examination was deficient. General physical examination was not performed in 25%. Breast examination had not been done in 65%, abdominal examination to check uterine contraction and fundal height was not performed in 34% and the vaginal examination for bleeding was left out in 51% mothers. Wound examination had been done in 63% but not in 30%. Regular general examination of babies had been done in 76% respondents only. The temperature and cord of 63% and 65% babies was examined respectively. This reflects lack of proper facilities to perform examinations and the need to follow proper WHO guidelines on examination with improvement in facilities e.g., increasing the staff number and provision of proper rooms so that healthcare providers can perform these examinations effectively. Attention must be paid to this area as these vital measurements can drastically improve quality of care.

Detailed counselling on postnatal care provided by healthcare workers was also deficient; information on maternal and infant danger signs was given in 31% respondents and left out in 69%. They were not told when to contact the doctors if they observed particular danger signs in their own and newborns. Similarly, information on family planning was given in only 28%. However, mothers agreed that information on breast feeding and maternal nutrition was given in 80% and 70% mothers respectively.

Qualitative findings: The mothers who weren't satisfied were asked to mention areas of improvement. They mentioned that the infrastructure of the hospitals including heaters and washrooms needed to be improved. Many mothers were having problem with the sanitary conditions, though the hospital itself maintained quite a good state of cleanliness, its washrooms were not in a good condition, and it was suggested by many mothers that hospital administration should pay more attention to the *sanitation and proper water supply*.

Correlation : Correlation between variables was calculated using chi-square test. It showed association among the following confounding variables:

- Age of respondents and the helpfulness of information provided by health care staff.(p=0.010)
- Age of respondents and the attitude of health care providers towards them. (p=0.002)
- Age of respondents and their satisfaction with the quality of care. (p=0.001)
- Education levels of the respondent with the attitude of health care providers towards them. (p=0.009)

DISCUSSION:

Main findings: Postnatal care services if provided appropriately can help reduce the maternal and infant mortality rates. Unfortunately, maternal and infant mortality rates are towards the higher end. During 1990 to 1999, average maternal mortality ratio at Lady Willingdon Hospital was 681/100,000 live births and a study suggested that multi-sectoral coordination, poverty alleviation, improving socioeconomic status of women, their nutrition and general health, availability of good quality health services and adequate contraceptive/reproductive were required to improve maternal health¹⁴. A similar study conducted from 2013-2017 in a tertiary care hospital in Peshawar, showed that the maternal mortality during the study period was 431/100,000 live births¹⁵. This indicates that with healthcare reforms, maternal mortality rate is decreasing in Pakistan but it is still overbearing when compared to developed countries.

Our study showed that majority (83%) mothers found the information provided to them by health care providers, helpful. 95% mothers said they were given timely medicines. However, mothers were not satisfied by the sanitary conditions of hospitals and suggested it needs improvement. In government hospital of Xiengkhouang¹⁶, a research showed only 22% mothers were satisfied with sanitary facilities. So this area must be given consideration. Here 85% mothers found the attitude of health care worker good, 9% found it poor others were not sure. Similar research in China¹⁷ indicated that more than 80% mothers province were satisfied with the politeness of health workers. Overall, 90% of the mothers were satisfied in general with the quality of care provided to them at lady Aitchison, 6% were not satisfied and 4% were not sure. Similar studies conducted previously in Pakistan¹⁸ stated that 61% mothers who visited government hospitals were not satisfied suggesting improvement over the years correlating with reduction in MMR. When asked about recording of temperature only 69% women agreed that these recordings were taken. 76% mothers said that general examination of their newborn was done. 63% and 65% said temperature recording and cord examination of newborn was done. These findings are inadequate when compared to developed healthcare set-ups. In the past, a study in Sindh showed that affordability and availability of services around pregnancy and birth were major factors responsible for preference for maternal care and could be linked with poor obstetrical care among rural women of Sindh.¹⁹ Another study conducted in four provinces of Punjab²⁰, suggested that targeted skill-based training and provision of adequate drugs and equipment are required to improve the quality of Emergency Obstetric and Newborn Care. Our research evaluated the areas of post-partum care which needed improvement in government hospitals and showed that the enhancement of the infrastructure, provision of proper WHO guidelines and separate rooms for examination were the main domains for consideration. Improvement in these areas can bring about a potential improvement in maternal mortality rate.

Strengths and limitations: The strengths of this study are: collection of demographic data which can confound the results and the data were collected through face-to-face questionnaire. The current study also has certain limitations as a variety of confounding factors are involved in determining the quality of care. In our research, it was found that age and education level of mother influenced the helpfulness of information provided by staff, the attitude of health care providers towards them and their satisfaction with the quality of care. These confounding variables must be taken into account while assessing future quality of care in hospitals. These results are similar to the service quality gap study²¹ conducted in public hospitals of Rawalpindi showed that satisfaction with quality was lower and association of service quality gap was statistically significant with gender, education, occupation, monthly income, and the number of visits to the hospital.

Interpretation: To refine the quality of maternal care proper counselling and physical examination of mothers and newborns in line with guidelines provided by WHO is needed to make it comparable to developed healthcare set-ups and reduce MMR. In addition, updating infra-structure of hospitals to provide better quality facilities in terms of air-conditioning, washrooms and well-designed areas for extensive examination of breast, pelvis, abdomen and neonates can improve postnatal care. Moreover, during quality assessment studies confounding variables such as age and education level of patients effect the results and must be taken into account.

CONCLUSION AND RECOMMENDATIONS

Multiple areas of improvement including paraphernalia, infrastructure, examination areas, proper WHO guidelines for examination, sanitary conditions, detailed information to patients have been observed. Sub-standard hospital facilities can deteriorate the quality of healthcare services and need upgradation for overall amelioration of care. Moreover, healthcare workers must be provided with WHO 2013 guidelines for post-natal examination²² and charts can be installed in hospitals to ensure detailed examination of mothers is done adequately. Women must be acquainted with sufficient information about danger signs of neonates to reduce mortality. Implementing an intensive postnatal care program will reduce the burden of maternal and neonatal mortality. Findings of this study can be implicated to conduct large scale studies which will remove the influence of the confounding variables and will allow more clarity on the elements of consideration.

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Authors' contribution: Atiya Mahmood; conceived, designed and did statistical analysis & editing of manuscript, is responsible for integrity of research. Ayesha Javed , Arooj Muzaffar; did data collection and manuscript writing. Amna Zia Eusaph; did review and final approval of manuscript.

Details of ethics approval: All ethical issues such as maintaining confidentiality and avoiding harm were strictly observed during the study. Approval of Institutional Review Board (IRB) KEMU, Lahore (IRB NO.-226/RC/KEMU) was obtained and administrative permission from all authorities of hospital was taken.

LIST OF ABBREVIATIONS

MMR - maternal mortality rate

WHO- world health organization

PNC- postnatal care

SD- standard deviation

SPSS- statistical package for social sciences

IMR- infant mortality rate

B.P- blood pressure

IRB-institutional review board

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AGE OF RESPONDENTS:

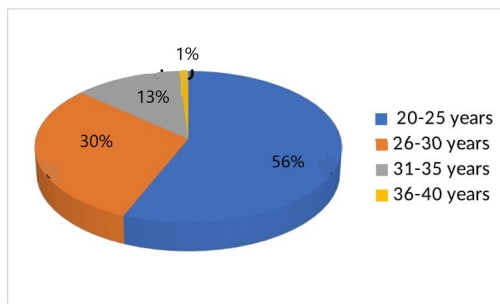


FIGURE 1: shows that out of 96 mothers, 56% were between 20-25 years of age, 30% between 26-30 years, 13% between 31-35 years and 1% between 36-40 years. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

INCOME OF RESPONDENTS:

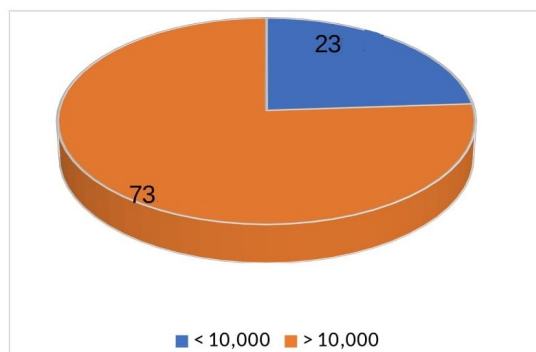


FIGURE 2: shows that 76% mothers had their family income greater than Rs. 10,000 and 24% had less than Rs. 10,000. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

EDUCATION LEVEL OF RESPONDENTS:

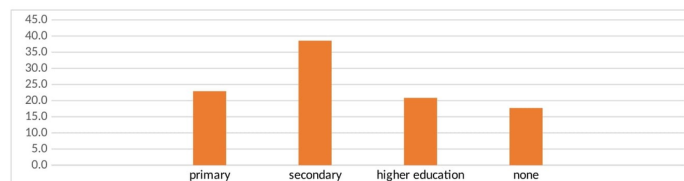


FIGURE 4: shows that out of 96 mothers, 23% had primary, 39% had secondary, 21% had higher education and 17% were illiterate. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

NUMBER OF VISITS TO LADY AITCHISON HOSPITAL:

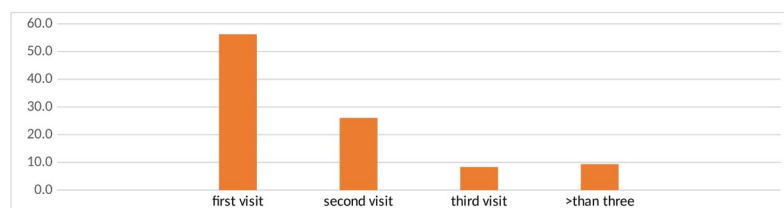


FIGURE 5 :shows that 57% mothers visited Lady Aitchison hospital for the first time, 26% for the second, 8% had their third visit and 9% were those who visited for more than three times. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

SATISFACTION WITH THE SANITARY CONDITIONS OF THE HOSPITAL:

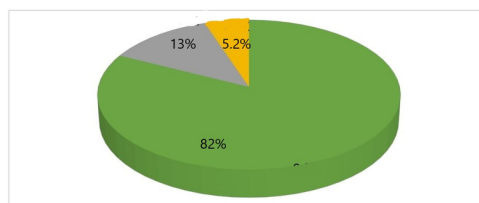


FIGURE 6: shows that among them, 82% were satisfied with the sanitary conditions, 13% were not and 5% were not sure. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

TIMELY AVAILABILITY OF MEDICINES:

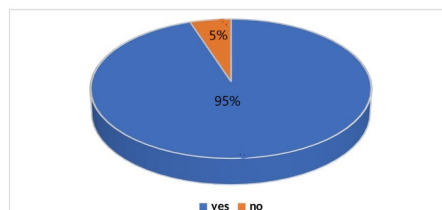


FIGURE 7: shows that 95% mothers were given medicine timely, while 5% said that they were not given medicines timely. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

HELPFULNESS OF THE INFORMATION PROVIDED BY HEALTH CARE PROVIDERS

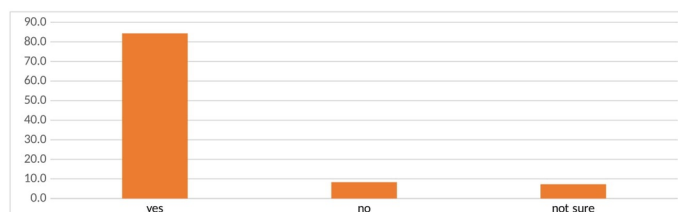


FIGURE 8: shows that 83% mothers found the information given by the healthcare providers helpful while 9% did not find it helpful and 8% were not sure about it. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

ATTITUDE OF HEALTH CARE PROVIDERS:

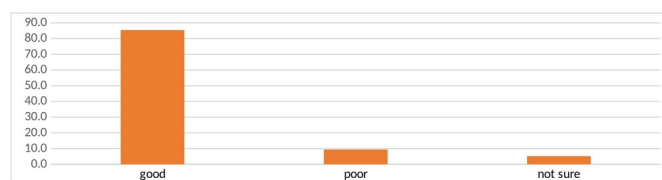


FIGURE 9: shows that 85% said that the attitude of healthcare providers towards them was good while 9% found it poor and 6% were not sure. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

SATISFACTION WITH THE QUALITY OF CARE:

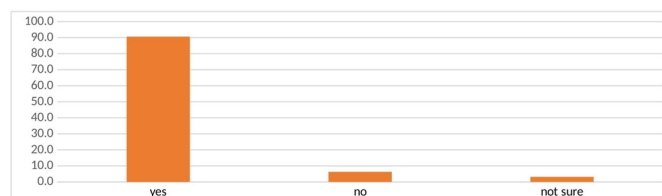


FIGURE 10: shows that overall 90% of mothers were satisfied with the quality of care at Lady Aitchison hospital while 6% were not satisfied and 4% were not sure about it. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

EXAMINATION OF BLOOD PRESSURE, PULSE AND TEMPERATURE :

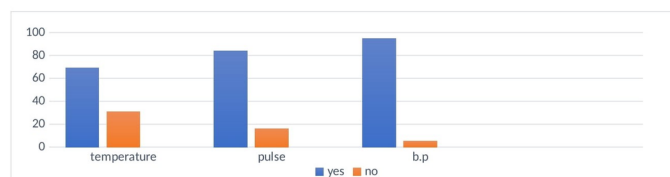


FIGURE 11: shows that b.p of 95% mothers had checked but not checked in 5% mothers; pulse of 85% mothers had checked by staff but not checked in 15% and temperature had checked in 69% but not in 31% mothers. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

EXAMINATION DONE ON THE MOTHERS SHOWED THE FOLLOWING RESULTS:

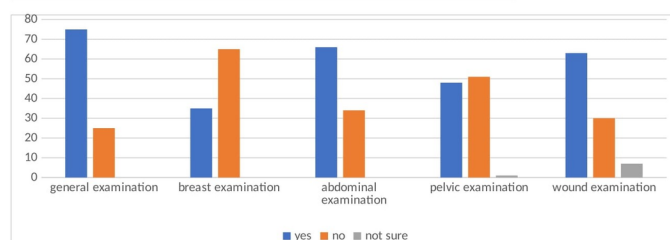


FIGURE 12: shows that general examination had done in 75% mothers but not in 25%. Similarly, breast examination had done in 35% mothers but not in 65%. Abdominal examination had done in 66% mothers but not in 34%. The pelvic examination had done in 28% but not in 51%, mothers and 21% were not sure Wound examination had done in 63% but not in 30% and 7% were not sure about it. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"

EXAMINATION OF BABIES SHOWED THE FOLLOWING RESULTS:

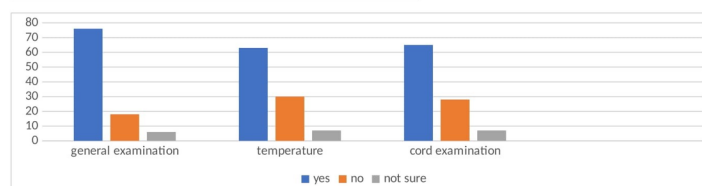


FIGURE 13: shows that general examination of baby had done in 76% respondents, not in 18%, temperature of 63% babies checked but not of 30% and cord examination had done in 65% babies, not in 28% and 7% respondents were not sure about these examinations. Created by the authors; Copyright 2021 "QUALITY OF POSTNATAL CARE SERVICES"