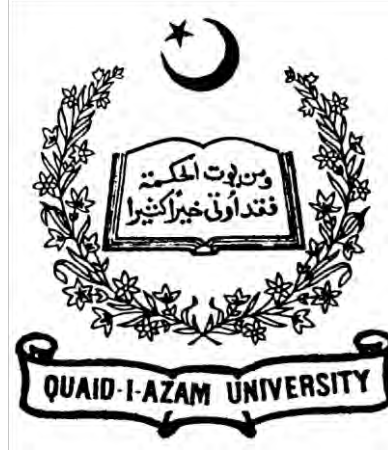Master of Science in Public Health

Assessment of maternal and newborn quality of care around time of birth in public and private hospitals of Chakwal, Pakistan

By

BIBI ZAHIDA

Al-Shifa School of Public Health, PIO
Al-Shifa Trust Eye Hospital
Quaid-i-Azam University
Islamabad, Pakistan
(Year2021-2023)

(ASSESMENT OF MATERNAL AND NEWBORN QUALITY OF CARE AROUND TIME OF BIRTH IN PUBLIC AND PRIVATE HOSPITALS OF CHAKWAL, PAKISTAN)

(CANDIDATE NAME: BIBI ZAHIDA)

(Registration Number: - 362858-PIO/MSPH-2020)

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Declaration

In submitting this dissertation, I certify that I have read and understood the rules and regulations of DPH and QAU regarding assessment procedures and offences and formally declare that all work contained within this document is my own apart from properly referenced quotations.

I understand that plagiarism is the use or presentation of any work by others, whether published or not, and can include the work of other candidates. I also understand that any quotation from the published or unpublished works of other persons, including other candidates, must be clearly identified as such by being placed inside quotation marks and a full reference to their source must be provided in proper form.

This dissertation is the result of an independent investigation. Where my work is indebted to others, I have made acknowledgments.

I declare that this work has not been accepted in substance for any other degree, nor is it currently being submitted in candidature for any other degree.

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(Dr. Ayesha Babar Kawish)   **(Bibi Zahida)**

 Head of Department   (362858-PIO/MSPH-2023)

Al-Shifa School of Public Health

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Abstract

Background: Health care for mothers and infants is fundamental for the proper functioning of a society. Provision of quality care to them is their basic right. Considerable efforts are required in developing countries, and more importantly strengthening the present system is essential.

Objective: The purpose of this research is to determine the maternal and newborn health care quality in public and private hospitals of Chakwal.

Methods: A cross sectional study was conducted in Chakwal, Pakistan. Data was collected by self-interviewed questionnaires to a random sample of 295 mothers and self-administered questionnaires to 104 health providers in public and private hospitals of Chakwal. Both questionnaires included questions on demographics, quality of care and about infrastructure quality. Descriptive and inferential statistics was applied to check level of significance with p-value <0.05 as significant. Chi square test was applied.

Results: The results showed the significant differences between the public and private healthcare facilities regarding the provision of quality of care of maternal and newborn around time of birth. Listening attentively shows significant value of 0.002, provision of emotional support p=0.04, shouting at mother p=.0001, washing hands p=0.01, fetal presentation p=0.03, vitals after birth p=0.001, behavior satisfaction p=0.001, temperature p=0.001, breastfeeding p=0.001, weighing baby p=0.001 and vaccination p=0.001. These significant values shows significant differences between both sectors.

Conclusion: There is a significant difference between the public and private healthcare facilities regarding maternal and newborn care. There is still need of many improvements to make the system stronger. Health care institutions would collapse if untrained assistants continue to provide a medical care to patients, if suggested procedures are not being followed consistently across all facilities, and if personalized solutions combining monitoring and accountability remained undelivered then looming threat cannot be averted.

Key words:

Health care providers, maternal health, newborn health, quality of care

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List of Abbreviations

IRB	Institutional review board
CP	Community pharmacy
MNH	Maternal and newborn health.
HT	Health technology
LMICs	Low and middle income countries
UCSF	University of California San Francisco
QOC	Quality of care
ENMM	Eliminating Preventable Maternal Mortality
WHO	World health organization
SPSS	Statistical package for social sciences
ENAP	Every Newborn Action Plan
ANC	Antenatal care
MDG	Millennium Development Goals
PNC	Postnatal check-up
SDGs	Sustainable Development Goals
MNCH	Maternal, newborn, and child health
NMCR	Near-miss case reviews
CMW	Community midwifery workers
NDHS	National Demographic and Health Survey
PHC	Primary health care
TBAs	Traditional birth attendents

CHAPTER 1: INTRODUCTION

Caretakers and the partner of a woman giving birth should be there for her since it is one of the most significant moments of her life. Women now deserve to be treated with the respect and dignity they have earned. Unrespectful maternity care, however, remains an important issue in both poor and prosperous nations. Neglect and abuse discourage women from using healthcare services, contributing to higher maternal death and morbidity rates in low-income countries (Sedigheh Ayoubi et al., June 2019). Women's participation in enhancing treatment quality and eradicating disrespectful behaviors was emphasized in a WHO consensus statement on reducing disrespect and abuse during delivery (WHO, 2018).

Direct or indirect contributions to providing, maintaining, and improving quality care come from physicians, nurses, support staff, paramedics, pharmacists, laboratory professionals, administrators, pharmaceuticals, government agencies, policymakers, patients, and the general public. For decades, the developed world has been at the forefront of discussions about how to improve healthcare quality worldwide. Their health system has adopted it as a guiding concept, whereas healthcare systems in developing nations like Pakistan still grapple with implementing it effectively. The private sector's efforts seem more credible, while the governmental industry lags far behind. One's perception of something's quality might be used to judge its merit or greatness. Like all other sectors, healthcare is continuously being challenged, and as a result, its quality is continually improving. Several factors contribute to what constitutes high-quality medical treatment (Faran Khalid and Ahmed Nadeem Abbas., dec. 2018)

Although maternal health care in Pakistan is generally lacking, this is especially true for the country's poorest citizens. Prenatal care is more widely available to women in urban settings than in rural ones; whereas 71% of pregnant women in urban settings get prenatal care, just 17% of rural setting women do. The mortality rate for mothers and their newborns has decreased globally during the last decade. Sustainable Development Goal 3.1 calls for reducing

the worldwide maternal death ratio to less than 70 per 100,000 live births by 2030. Nonetheless, many LMICs continue to face a substantial problem due to high maternal and newborn mortality rates while having insufficient resources to access and deliver adequate healthcare.(Asif Raza Khowaja et al., 2018)

Considering the ever-increasing expense of maternity care, policymakers and healthcare decision-makers are eager to investigate the potential of HT integration in maternal and MNH. In Pakistan, mothers may get immunization reminders and prenatal screening results on their smartphones. Patients, healthcare systems, and society may incur more expenses due to this development toward the more effective use of HT integration. (Asif Raza Khowaja et al., 2018)

At least one ANC visit was received by 83.5% of pregnant women in Sindh, while ANC visits were performed by medical professionals in 95.5% of cases; While 61.7% of these women started ANC treatment, only 57.3% completed the required four or more sessions, and only 53.7% started ANC in the first trimester. (Jin-Won Noh et al., 2018)

Almost half of all child deaths before a kid reaches age five occur among newborns, which amounts to more than 2.5 million deaths annually. Most infant deaths may be traced back to complications associated with premature delivery. As measured per thousand live births, Pakistan's rate of preterm births is among the highest in the world. KMC has been stressed globally by the ENAP as a crucial part of newborn health measures. (WHO, 2018)

The majority of Pakistan's estimated 231.4 million people live in rural regions. While Pakistan has had some success in addressing a few health related MDG indicators, it has mostly failed to do so. Around 75% of women have access to ANC, 52% have a home birth with the assistance of an SBA, and 62% are followed up with for a PNC after giving birth. While Pakistan has a robust public healthcare system, barely 15% of births occur there. Obstacles to better maternal and infant health outcomes are rooted in structural and sociocultural factors, such as limited access, high costs, and poor quality of treatment. The lack of trained medical

professionals, inadequate facilities, and strained interpersonal relationships among staff members contribute to poor treatment (Waqas Hameed & Bilal Iqbal Avan, 2018)

Between 2010 and 2018, 91,076 babies were born in Pakistan, whereas 456,276 were born in other GN locations. As compared to the average of 20.4 for all sites, Pakistan's maternal death rate was much higher (319 per 100,000 live births), as was its newborn mortality rate (49.4 per 1,000 live births). The regional average was 23.2%, whereas Pakistan's rate was 53.5% per 1000 births. Preterm births and babies with low birth weights were also much more common than in any other studied region. Medical treatment for expectant mothers and their babies in Pakistan was much lower than in other locations. (Aziz et al., 2020)

Locations far from patients, insufficient supplies, inconvenient hours, and unpredictable staff availability all played significant roles in lowering management and provider quality and coverage. Lack of knowledge, inability to make independent decisions about receiving ANC, the apathy of facility employees, financial constraints, and a lack of accessible transportation are all social issues. Indigenous birth attendants offer various services in the home, but they are sometimes misunderstood for adequate antenatal care that might identify pregnancies at risk for complications. As reported by (Mjrooh et al., 2014),

SDGs for 2030 must be accomplished via rapid acceleration of change and strong connections created across several sectors. As data on coverage of interventions are systematically recorded and patterns across and within nations are documented, the need for such a solid foundation has become more apparent. The challenges governments face in providing effective treatments at scale while maintaining an acceptable quality of medical care means that simply knowing what needs to be done to reduce maternal and newborn mortality and prevent stillbirths in low-resource settings is not enough. (Victoria B. Chou et al., 2019)

The World Health Organization's long-term objective for pregnant women and newborns is to drastically reduce worldwide mortality and morbidity rates via the provision of high-quality, timely treatment that incorporates proven life-saving strategies. Quality of care may be broken

down into three categories: organisational framework; internal procedures; and patient and provider health outcomes. (Victoria B. Chou et al., 2019),

Pakistan's health policies include MNCH as a priority issue. The country's MNCH policy is to increase women's and children's access to high-quality MNCH care by coordinating services throughout the whole spectrum of the health care delivery system. Health ministries at both the federal and provincial levels have launched action plans under National Health Vision (2016-2025) to raise funds for the nation's existing maternity, infant, and child healthcare initiatives with the help of the World Health Organization (WHO). (WHO,2020)

There is a correlation between a woman's and her husband's socioeconomic position and her risk of mortality during pregnancy, abortion, and postpartum. If these issues are resolved, we can complete the SDG.(Rashida Akbar, Alireza Jafari, and Alireza Jafari, 2021)

Pakistan failed to meet the MDG target of lowering child mortality and is now ranked among the top 10 nations with the highest infant mortality rate (42 out of every 1000 babies die in their first month). Despite the GOP and its numerous development partners' best efforts, infant death rates have not decreased noticeably despite increased access to prenatal care, facility-based delivery, and strengthened district health systems. The GoP's goal of achieving universal health coverage by 2030 presents a new window of opportunity to reach the global objective of 12/1000 newborn deaths (Pradhan et al. 2022).

To further reduce maternal and neonatal mortality, the worldwide Every Newborn Action Plan (ENAP) sets out a strategy to enhance the QoC at and around delivery time (Ashish KC et al. 2019).

Healthcare interventions implemented during the first week of life have been shown to reduce mortality rates for both mothers and infants by as much as two-thirds worldwide. Women benefit from ANC and its associated material because it helps them be ready for giving birth, from spotting and managing pregnancy-related illnesses to knowing where to go for emergency obstetric care. In addition, women need access to expert birth attendance from trained medical

personnel to have a healthy baby and give birth without incident. Last but not least, mothers and their babies need follow-up treatment after giving birth to ensure Overall, the continuum of care is completed by following a route from pregnancy through delivery to postpartum,(Sarosh Iqbal et al., 2017),

The impact of care quality is large and significant and is not at all mediated by socioeconomic status. In addition, there seems to be a dose-response link between treatment quality and hospital births, so the more significant the care quality, the more likely a baby will be born in a hospital. (Sohail Agha and Emma Williams, 2006),

Many maternal and newborn parameters, as well as pregnancy outcomes, are significantly different between the Pakistani and other GN locations. Maternal and newborn outcomes are poorer in Pakistan. Still, it is less clear whether variables and behaviors related to labor, delivery, and neonatal care are to blame for the disparity in death rates. However, Pakistan has a higher death rate across the board, including in every birthweight category over 2500 g. Nutritional status, food, and body mass index are all relatively comparable across Indian and Pakistani women, making it difficult to pinpoint a single cause for the striking disparities. (Aleha Aziz et al.,2020)

1.1 Rationale:

- Globally, 2.4M neonates died in 2020, approx. 6,700 neonatal deaths every day (WHO,2020).

- Pakistan's IMR in 2022 is projected to be 56 deaths per 1000 live births, a decrease of 1.91% from 2021 and neonatal mortality rate per 1000 live births is 39in 2021. (UNICEF)

- Almost 95% of all maternal deaths occurred in low and lower middle-income countries in 2020.(WHO)

- In 2020, the global MMR was 152 deaths per 100K live births. 186 deaths per 100K live births in Pakistan(UNICEF).

- Standard medical care is essential for better health outcomes.

- There is no published information in the focused area of research. So the purpose of this research is to identify the factors affecting quality of care of maternal and newborn health around time of birth in health facilities of Chakwal city.

1.2 Research Objectives:

- To measure the level of maternal quality of care around time of birth in public and private hospitals of Chakwal city.

- To measure the level of new-born quality of care in public and private hospitals of Chakwal city.

- To compare the public and private health facilities in Chakwal in provision of quality of care around the time of birth.

CHAPTER: 2 LITERATURE REVIEW

2.1 Burden on healthcare systems:

Increases in health spending and the creation of new resources over the next years will be necessary to deal with mounting health problems, but a closer look at the current healthcare system is even more important (Berglund et al.,2005, Kluve et al.,2013). Previous polls have shown that commercial and public healthcare systems are not equally burdened with patients. The consequences of basic and secondary health care facilities that are inefficient or broken are far-reaching. Tertiary healthcare facilities, most of which are found in large urban centers, are where people must take their patients. Particularly affected are primary and secondary care clinics in the suburbs and the countryside. As the illness burden and total costs rise, so do the anguish and frustration patients and their families feel at tertiary care institutions due to increased workload and limited services (Blau et al.,1989). Studies have shown a correlation between the number of work physicians and nurses have to complete and the quality of care they provide for their patients, with more work leading to worse patient results (Owen et al.,1993, Bauer Schuster et al.,2013).

It is important to record and monitor the strategies, coverage, feasibility, acceptability, and efficacy of the many health initiatives now underway in Pakistan to improve maternal, neonatal, and child health. A recent paper (Espinosa et al.,2017) discussed how to keep CMW engaged via pay, incentives, and working conditions. Raise public understanding of the value of trained birth attendants and their role in reducing mother and infant mortality and morbidity. (Klerman et al.,1990).

As with other maternal health care, higher levels of education, higher income, and urbanization are consistently significant indicators of their use. The volume and relevance of the other variables of service consumption, such as ante-natal care, a skilled attendant at delivery, and postnatal care, differ by the kind of maternal service. Interventions should focus on the specific

individual, household, community, and state-level factors associated with different types of maternal health care. For interventions to be successful, they must investigate why fewer lowincome, rural women have access to and utilize maternal health care services and what may be done to improve that situation (Klerman et al.,1990).

2.2 Medical facilities for Mother and Newborn:

For a newborn at medical facility, to provide quality health care, an environment that is both safe and patient centered as well as clinically cost-effective, efficient, and egalitarian, with the promise of continuous and persistent attempts to improve, is essential (Rindfuss et al.,2007). Improvements in patient and family happiness and healthcare outcomes are two major factors that contribute to healthcare quality. All members of the healthcare team, whether they are physicians, nurses, support staff, paramedics, chemists, laboratory technicians, office managers, pharmaceutical companies, government agencies, policymakers, patients, or members of the community, play a role in the provision, preservation, and improvement of care (Rindfuss et al.,2007).

Facilitating the use of cutting-edge, generally recognized standards to aid patients. Each procedure's value in any clinical setting is determined by how well it balances clinical and cost-effectiveness. On-time treatment is always provided. There must be no missed patients or potentially dangerous delays. There is no bias against anybody because of their sexuality, ethnicity, class, religion, nationality, sexual orientation, or socioeconomic background. (Barnes et al.,2017).

2.3 Healthcare Quality Worldwide scenario:

Concerns about healthcare quality have been discussed in many parts of the world for decades, with the developed world providing the most necessary standards and best practices.The private sector's efforts have been compelling, while the governmental sector

is severely deficient. Quality is always a measure of worth, whether an intangible characteristic or a quantifiable performance standard. (Barnes et al.,2017).

Variables at the person level, the community level, and the state level are all inconsistent predictors. Individual, family, neighbourhood, and state-level factors affect women's decisions to seek and utilize maternity care services. Maternal health care indicators have several essential variables. It is vital to address the underlying individual, family, community, and policy-level variables to increase maternal health treatment consumption via interventions. (Benjamin et al.,2015).

In line with earlier research, we found that higher levels of education are positively associated with all three measures of mothers' access to maternity care. Health-seeking behavior may be affected by education in a variety of ways. Education is a surrogate for knowledge, cognitive abilities, and personal values. Women with higher levels of education tend to have a better understanding of their health and the services accessible to them, a larger capacity to pay for medical care, and more flexibility to exercise agency in their care, including selecting maternity services (Leibowitz et al.,1992, Hwang et al.,2021, Hewlett et al.,1991). Mothers with higher levels of education are more likely to use government-funded health programs (Varga et al.,2014, Leibowitz et al.,1992). Furthermore, the power gap between service providers and customers may be narrowed via education, making people more comfortable seeking help (Parness et al.,2018, Hwang et al.,2021).

Evidence may be found from worldwide venues like NICE recommendations, IHI, and a few others to support the idea that improving healthcare quality is necessary for long-term success. There is an immediate need to investigate and evaluate potential quality improvement strategies, community reactions, and local results (Kluve et al.,2013). This will aid in the creation of policies that are realistic and longlasting. We must roll out our health information system and maintain it as necessary to keep track of patient records and medical occurrences (Schmidt et al.,2010). This will aid in defining and determining the

current quality standards, the challenges and difficulties involved in developing each quality feature, and potential improvement areas. Most significantly, it will assist in data measurement since it is often argued that no measurement can be made without data, leading to ineffective management and work and ultimately leaving society in the dark (Varga et al.,2014). The prosperity and security of a country may be gauged, in part, by the state of its population's health.

2.4 Health care delivery system in Pakistan:

Public, private, civil society, charitable contributions, and donor agencies all contribute to Pakistan's diverse health care system. In Pakistan, people may access four distinct types of health care: preventative, promotive, curative, and rehabilitative. Pakistan has both a public and a private health care delivery system. Except in regions under federal control, the constitution places primary responsibility for health care with the provinces (Hassan, Mahmood et al. 2017).

With a GDP growth rate of 5.2% in fiscal year 2017 and 5.5% in fiscal year 2018, the World Development Report classifies Pakistan as a lower middle-income nation. Health care in Pakistan receives funding from both the government (at 0.9% of GDP) and the private sector (2.4% of GDP) (Leibowitz et al.,1992, Parness et al.,2018). Still, more rapid increases are needed to meet the target of 4-5%, the minimum percentage of a country's GDP necessary to provide its citizens with basic healthcare facilities and the standard for limiting the share of health expenditure covered by individuals' own pockets to 20% (Hwang et al.,2021). The provinces have made a commendable start in the right direction by installing biometrics to improve attendance and, by extension, healthcare delivery.(Meissel et al.,2019).
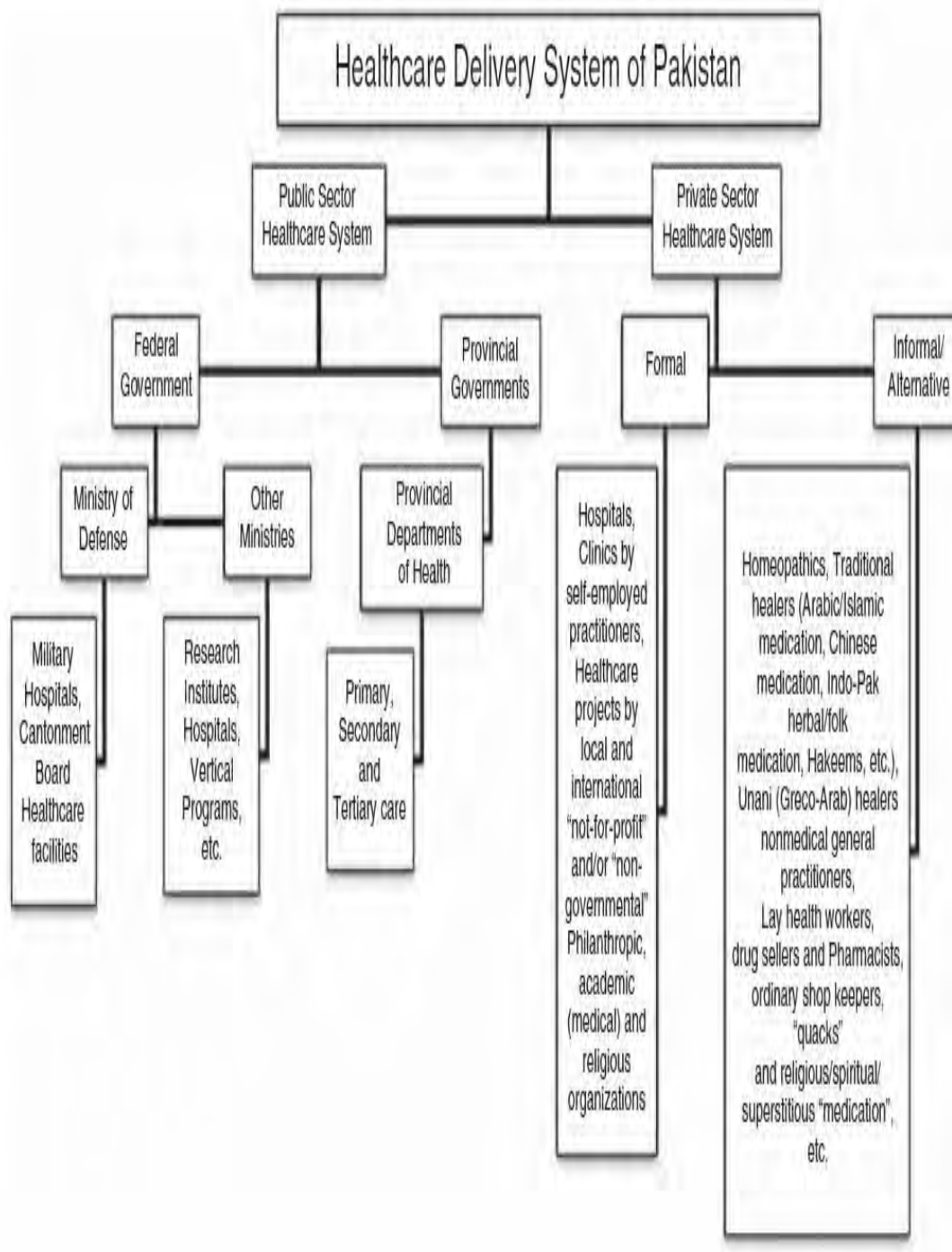
Figure 1: Healthcare delivery system of Pakistan (Hassan, Mahmood et al. 2017)

2.5 Pakistan Maternal and Newborn Quality Of Care:

There are many different types of hospitals and clinics in Pakistan, from specialized tertiary care facilities to community health clinics. Still, due to poor management, they have all lost their reputation. Mal-governance, neglect, injustice, and unaccountability are the lethal

poisons that not only prevent additional allocation of resources but also hurt the current ones, making it harder to provide excellent healthcare even though more resources are available (Benjamin et al.,2015).

Poor staffing of health facilities, especially primary health care facilities, has been documented as a factor that inhibits women from seeking medical treatment when labour begins, even when they have received prenatal care services (Berglund et al.,2005). Other factors contributing to the absence of trained attendants during delivery include women's perceptions of the relative effectiveness of medical and traditional birth attendants and the influence of traditional and religious beliefs. (Wood et al.,2019). According to prior research (Parness et al.,2018, Meissel et al.,2019), many rural Pakistan women consider the services of TBAs to be of more excellent quality than those of medical healthcare practitioners, especially in terms of interpersonal contacts and relationships. (Klerman et al.,1990). The factors that affect all three measures of mothers' access to medical care have certain commonalities but also unique characteristics. Inconsistently significant predictors of service usage are found at the household level, whereas education is the sole meaningful predictor at the personal level. Vital factors at the neighbourhood level include living in a city and having a high concentration of media outlets (Klerman et al.,1990).

2.6 Cultural Beliefs Regarding Maternal and Newborn Health:

Remarkably, mothers in Pakistan don't use maternity care more when their kid is born into a higher socioeconomic status, even if there is no correlation between these two factors. The use of maternal services has been reported to decrease sharply with increasing numbers of children.

The use of skilled help and postnatal care differs by ethnicity, although prenatal care use does not. The southern Igbos and other "minority" tribes used services more than the majority Hausa population. This trend is in line with what has been seen elsewhere, such as in the National Demographic and Health Survey (NDHS) (Smeeton et al.,2011), which describes Pakistan as

having "significant regional variance in health status." cultural beliefs and practices have been shown to impact childbirth considerably and associated fertility-related behaviours, contributing significantly to the overall picture of maternal morbidity and mortality. Due to cultural conventions, women are less likely to seek health-related help during pregnancy and delivery. Many girls are married off to much older men based on religious and cultural beliefs, often as young as 9 or 10 years old.

2.7 World Health Organization on Quality of Care:

Finding workable solutions to these issues on a large scale has made slow but steady progress. However, a major contributor to preventable maternal and newborn injury in low and middle-income nations is the poor quality of care during institutional births. The WHO created the Safe Childbirth Checklist and tested it in the field. (WHO). The provision of high-quality healthcare is a primary objective of the World Health Organization's Global Strategy for Women's, Kid's, and Adolescent Health 2016-2030 (Ozer et al.,1995).

A global initiative to support further assessment of the program in a variety of situations has been launched by the WHO.(WHO).As a means of helping healthcare providers in low-resource areas reduce maternal and infant mortality, an innovative checklist program has been devised (Blau et al.,1989). There is a growing body of evidence that functional networks of care can strengthen relational linkages between frontline and higher-level health facilities and can improve maternal and newborn outcomes especially in low- and middle-income settings.
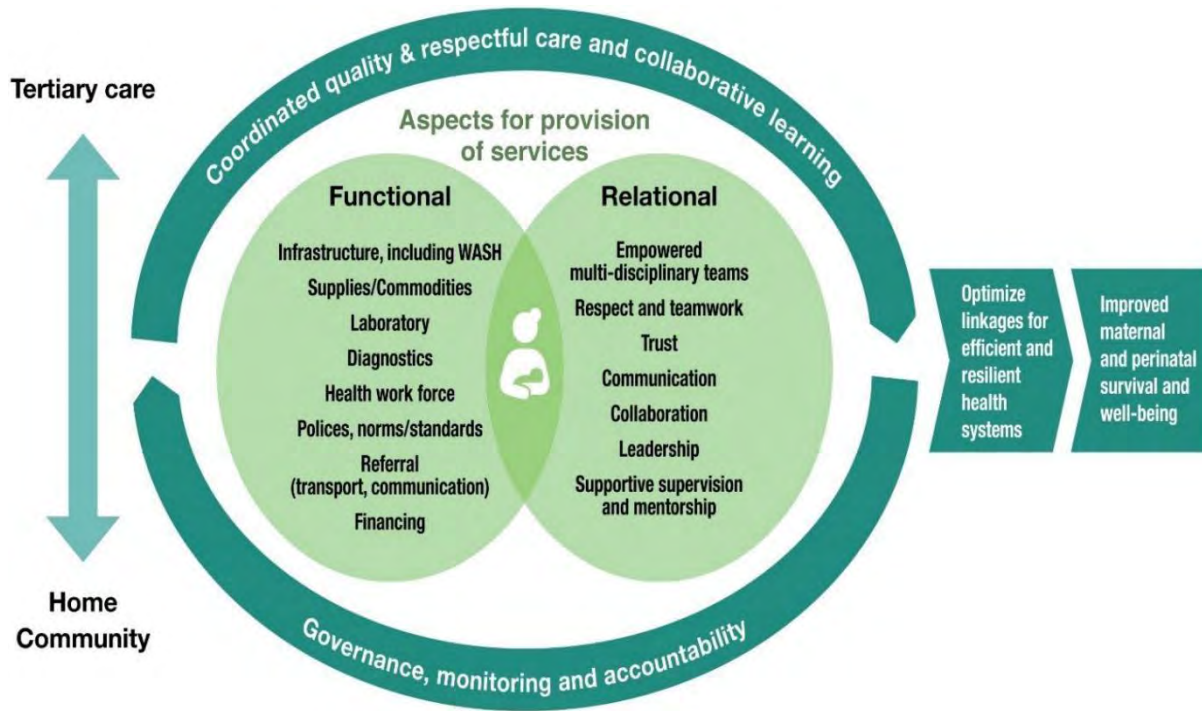
Figure 2: WHO Functional network of care for service delivery with quality in maternal health

Due to the multifaceted nature of quality of care, a variety of models were employed to develop a conceptual framework to assist clinicians, administrators, and legislators in raising standards for maternal and infant health care. Based on these models and the World Health Organization's health systems approach, the areas that should be focused in order to analyze, enhance, and monitor care in health facilities within the context of the health system are shown in the figure below.
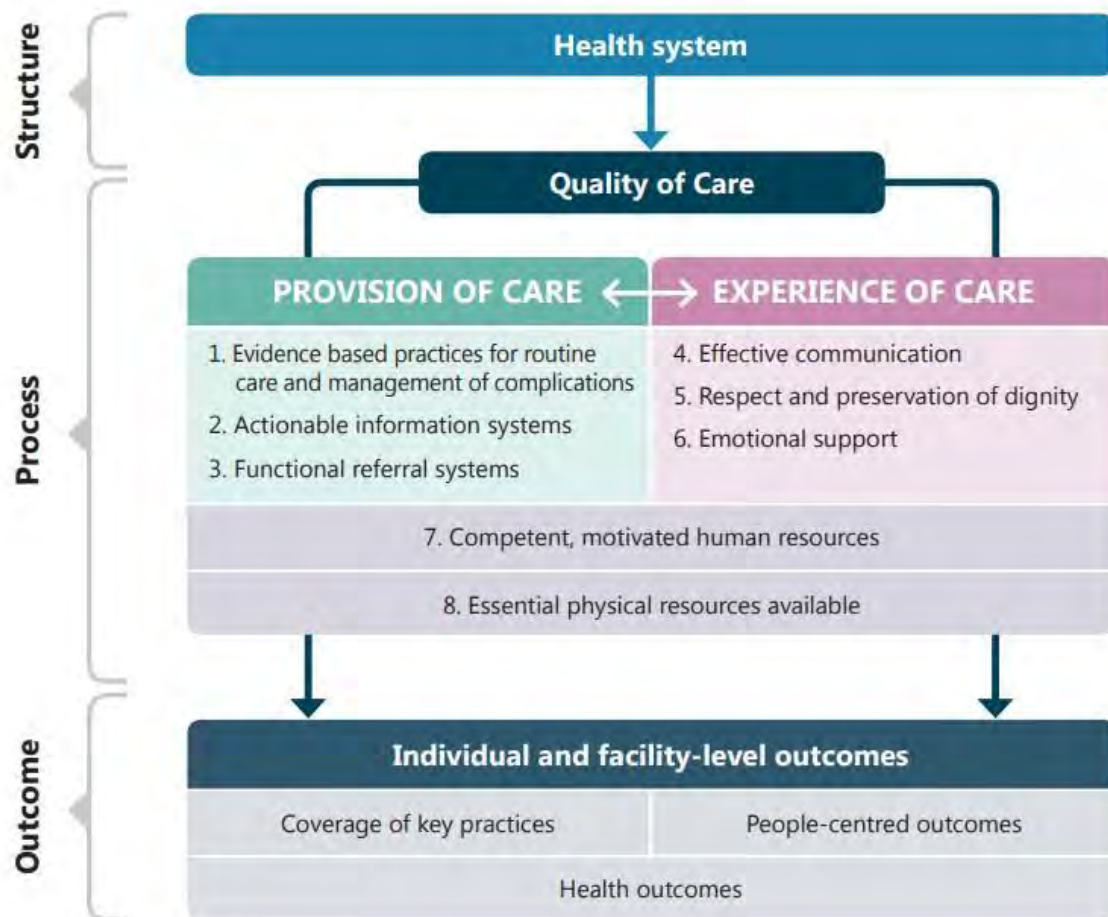
Figure 3: WHO Quality of Care Framework

2.8 Pakistan Policies Regarding Maternal Healthcare:

Regarding health, education, nutrition, and poverty, Pakistan is determined to make strides for the better. It has created and improved several health programs and is working toward SDGs. Pakistan's healthcare infrastructure, healthcare service, and information system may all benefit from the implementation of policies and recommendations made by international organizations like the WHO (Meissel et al.,2019).

The research results will aid in formulating policies and creating effective services for the people living in Karachi's urban areas. Early diagnosis of high-risk pregnancies via effective prenatal care at the community level and establishing a system to enable prompt access to referral facilities are essential to reducing maternal mortality. This necessitates women having

sufficient information about care throughout pregnancy and being able to identify the significance of prenatal care and its use. Several reports have reported maternal fatalities and severe morbidity in Rehri Goth (Varga et al.,2014).

Women of childbearing should seek out and receive prenatal care in their local communities. Behind this need are the necessity of improving women's access to and success in formal education in their local communities (Schmidt et al.,2010). As part of prenatal care, there should be a greater emphasis on tetanus vaccination for women. The services given by government health institutions must also be evaluated, and why women do not use these treatments despite their low cost must be determined (Donoghue et al.,2017).

It is crucial for programs to take a holistic approach, targeting individual, family, and community characteristics that influence the use of maternal health care. Low-income, loweducation women are the least likely to utilize maternal health care. It has been established previously that the poor face significant hurdles to service consumption due to cost and lack of access to services. (Donoghue et al.,2017). Promoting family planning may eventually stimulate the usage of other maternal health services, the prevalence of the small family norm in the community and personal fertility-related beliefs are connected with disparities in service utilization. This means that efforts to normalize small families and alter negative views about contraception are worthwhile (Blau et al.,1989). Fertility-related views, by attitudes toward family planning and ideas about the optimal family size, are predictably linked to the use of maternal health care. Those more receptive to current health-related ideas and services exhibit less conservatism when they express support for family planning and have a firm grasp on what makes an optimum lower family size. The use of maternal services grows gradually with socioeconomic status.(Meissel et al.,2019, Blau et al.,1989, Bauernschuster et al.,2013).

2.10 Existing Programmes In Pakistan Regarding Maternal And Newborn Healthcare:

In order to help the Ministry of National Health Services, WHO has joined forces with UNICEF. In the provinces of Khyber Pakhtunkhwa and Balochistan, WHO is working with UNICEF and UNFPA to create a system for monitoring and responding to maternal and perinatal mortality. The World Health Organization (WHO) assisted the federal and provincial health authorities in developing costed strategic action plans for the next five years to implement the National Health Vision (2016-2025).

In order to ensure that national family planning programs receive the support and strengthening outlined in WHO's evidence-based global guidance documents, the WHO country office is collaborating with organizations like UNFPA and provincial health and population welfare departments to revise and distribute standardized training materials and update the National Standards on Family Planning.WHO Globally approved training programs for enhancing reproductive, maternal, neonatal, and child health have been scaled up in Pakistan with the help of the United Nations Population Fund (UNFPA) and the United Nations Children's Fund (UNICEF). Among them are Nutrition Stabilization Centres (NSC), Integrated Management of Newborn and Childhood Illnesses (IMNCI), and Pregnancy, Childbirth, and Postnatal Care (PCPNC).

2.11 State-level Issues Regarding Maternal Healthcare:

Undoubtedly, state-level characteristics predict service consumption that is not currently being monitored. State-level issues that influence service consumption should be identified and addressed for an approach to be successful.When women report feeling pressured to act a certain way, social desirability bias may play a role. Factors that may have influenced the image of usage patterns include, for instance, respondents' proximity to maternal health care in their immediate area.(Smeeton et al.,2011).Individual, family, community, and state-level factors affect women's decisions to seek maternal health care (Kluve et al.,2013).

Our healthcare system suffers from a lack of quality checks and control mechanisms at the structural, organizational, and administrative levels, and the results are unsatisfactory when

compared to the expanding population. To hasten the normalization of contemporary health settings in terms of attendance, cost, quality, and value, much effort must be undertaken with the utmost sincerity and resolve. To evenly distribute health care costs between the public and private sectors, provincial and federal governments must speed up and modernize primary and secondary healthcare programs; create more sustainable health schemes, particularly in rural, suburban areas; increase budget allocation for health; and improve the conditions of public-holding tertiary care centers (Ozer et al.,1995). The proportion of PHC providers to the population strongly predicted prenatal care usage and skilled attendance at delivery but not postnatal care use at the state level. The closer a community is to a PHC, the lower the likelihood that its people will go there for care (Ozer et al.,1995).

Beyond the effect of individual, family, and community variables, there is a significant role played by unmeasured determinants acting at the state of residency level in predicting the usage of maternal health care.(Yakupova et al.,2021). According to much research in developing countries, mother age, number of living children, education, area of residence, employment, religion, and ethnicity are strongly linked with prenatal care usage (Ozer et al.,1995).

2.12 Operational Definitions:

2.12.1 Quality of care:

Quality of care is the extent to which the provision of health services to people and groups improves the probability of achieving desired health outcomes.

2.12.2 Maternal health:

Women's well-being before, during, and after delivery is referred to as maternal health. (WHO)

2.12.3 Newborn:

Neonate is the medical term for a baby younger than 28 days (WHO)

2.12.4 Quality of MNH care:

 "The extent to which maternity and newborn health services (for both individuals and populations) improve the odds of receiving treatment in a timely manner that is both consistent with best practices and respectful of women's and families' unique values and goals".(WHO)

2.12.5 Hospital:

The continual availability of hospital care for acute and complicated diseases enhances the efficacy of many other components of the health system. In order to effectively address the health care requirements of the public, they channel limited resources via well organized referral networks. (WHO)

2.12.6 Antenatal care:

To provide the greatest possible health for mother and child throughout pregnancy, antenatal care (ANC) is offered by trained medical personnel to expectant mothers and teenage girls.

2.12.7 Third trimester of pregnancy:

Last three months of pregnancy 27-40 weeks. (UCSF)

2.12.8 Infrastructure:

The creation of public goods or manufacturing processes is often part of an organization's or nation's infrastructure.

2.12.9 Health care provider:

Medical doctors, osteopathic doctors, dentists, chiropractors, psychologists, optometrists, nurses, midwives, and clinical social workers who are licensed by the state and acting within the legal boundaries of their professions are all examples of this.

2.13 Conceptual framework:


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┌─────────────────────┐      ┌─────────────────────┐      ┌─────────────────────┐
│  QUALITY OF CARE    │      │      PROCESS        │      │      OUTCOME        │
└─────────────────────┘      └─────────────────────┘      └─────────────────────┘
```

QUALITY OF CARE	PROCESS	OUTCOME
HEALTHCARE PROVIDERS	HCP SOCIO DEMOGRAPHIC (AGE, GENDER, RESIDENCE ETC)	• FACILITY PERFOMANCE • QUALITY MATERNAL AND NEWBORN HEALTH CARE • COMPETENT AND RESPECTFULL CARE • RESPONSIVE TO COMMUNITY NEED • IMPROVED REFFERAL • COMMUNITY SATISFACTION • SERVICE UPTAKE
HOSPITAL INFRASTRUCTURES	MOTHER SOCIO DEMOGRAPHIC	
	HCP WAY OF DEALING WITH MOTHERS	
PROVISION OF SERVICES TO A MOTHER AROUND TIME OF BIRTH	SERVICES • WELL TRAINED STAFF • WELL EQUIPED FACILITES • ACESS TO SERVICESS • ACCOUNTIBILITY	
PROVISION OF SERVICES TO NEWBORN	MOTHER SATISFACTION TO SERVICES	

Figure: 4 Conceptual framework

CHAPTER 3: METHODOLOGY

3.1 Research Design:

To evaluate the quality of maternal and newborn care at Chakwal city's health care facilities around the time of delivery, a cross-sectional quantitative study was done.

3.2 Study duration:

Study period for the current research was 6 months from September 2022 to February 2023.

3.3 Study Setting:

The study was conducted in Chakwal city that is in Rawalpindi Division, Punjab Province, Pakistan. Its population is 1,495,463 (2017).

3.4 Research participants:

Mothers of third trimester in hospital coming for delivery.

3.5 Sampling Technique:

Non-probability purposive sampling technique will be used for selection of consecutive patients who met the inclusion criteria.

3.6 Sample Selection:

3.6.1 Inclusion criteria:

☐ Expectant mothers of third trimester.

☐ All health care providers working at gynae department.

3.6.2 Exclusion criteria:

• Unmarried women.

- Expectant mother before third trimester.

- Married women not having children.

- Non volunteers.

- Health care providers working at other than gynae department.

3.7 Sample size calculation:

Using the percentage method for sample size calculation in Open-Epi menu, Version 3 software, we determined that 295 participants would be needed to detect a difference in quality of care provided to mothers and infants of 5% or more (Sohail Agha et al.,2019). The prior prevalence among healthcare practitioners was 92.7% with a 95% confidence level (1.96), and a margin of error of 5.0% (n=104). (Sohail Agha et al.,2019).
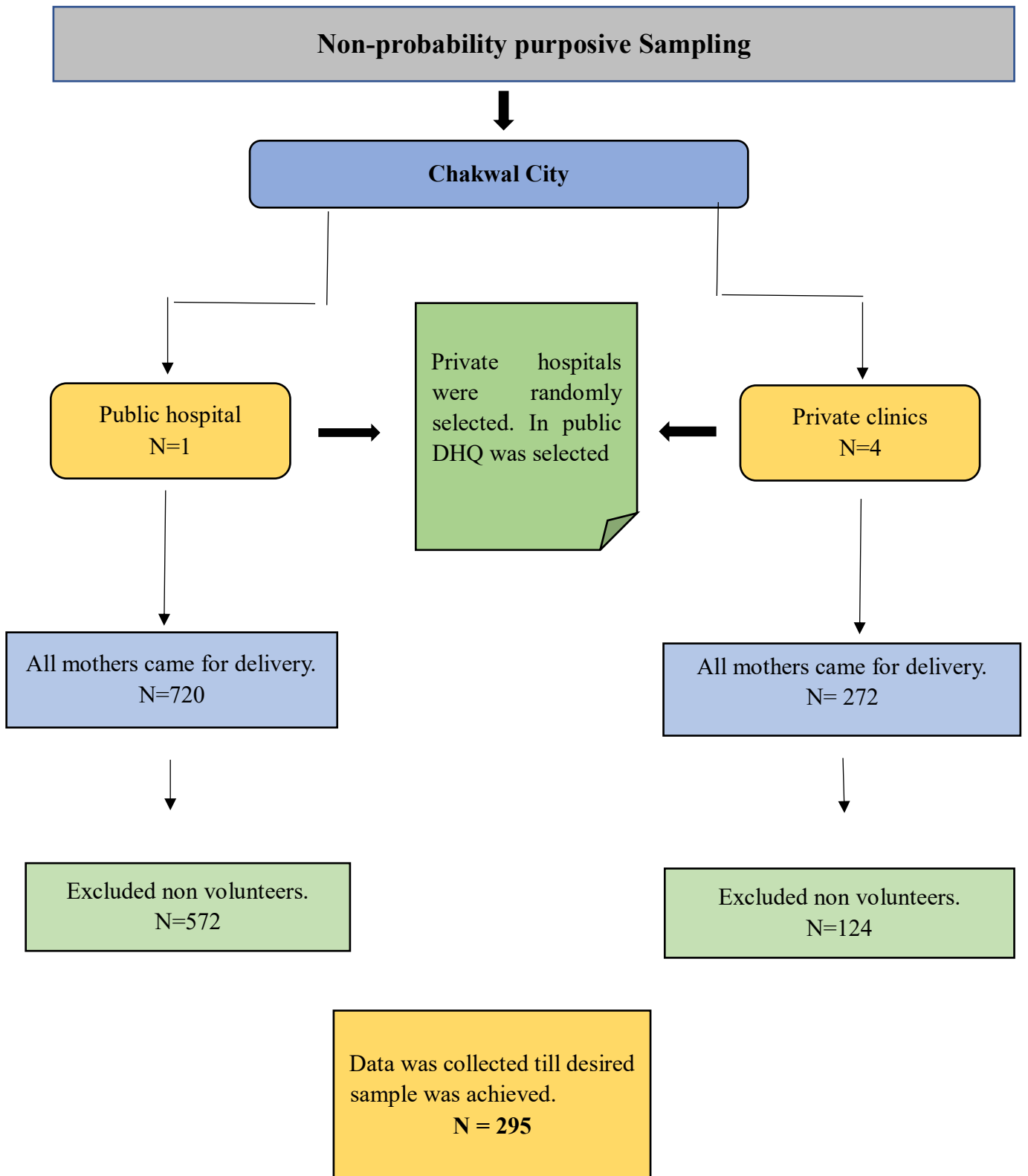
Figure 5: Non-probability purposive Sampling

3.8 Data collection instrument

3.8.1 Questionnaire design:

Respondents filled out a questionnaire on their own time to compile the data. Two Performas were developed to collect data regarding sociodemographic characters of the respondents and assessment of quality of care. One was for mothers and other was for health care providers. Questionnaires were developed using an adapted tool from three validated tools.

- Safe childbirth checklist (WHO,2012).
- Guidelines for enhancing the standard of care provided to mothers and infants in hospitals (WHO, 2016)
- Results from in-person observations of maternity care in Sindh Province, Pakistan (Sohail Agha et al.,2019)

These are the tried-and-true methods for gauging the quality of treatment at Chakwal's hospitals and clinics for expecting mothers and newborns. Questionnaire is attached in Annexure-A.

3.8.2 Contents of Questionnaires:

The questionnaire designed for mothers consisted of three parts

- The first part was about sociodemographic features of mothers. It included age, Residence, Education, Employment status, Husband employment status, Husband salary.
- The second part was about the quality of care of mothers around time of birth.
- The third part was about the quality of care of newborns right after birth.

The second questionnaire designed for health care providers also consisted of three parts.

- The first part was about sociodemographic features of HCP. It included age, gender, marital status, residence etc.

- The second part was about the way they deal with the patients and mothers.

- The third part was about the hospital management.

3.9 Study Variables:

3.9.1 Outcome Variable:

The primary goal of the survey was to evaluate the quality of maternity and infant care provided in the weeks after delivery. The modified Safe delivery checklist was used to assess the quality of care provided to mothers in the hours and minutes after giving birth as the outcome variable (WHO,2012). Guidelines for enhancing the standard of care provided to mothers and infants in hospitals (WHO, 2016). Observational evidence on the quality of maternity care in Sindh Province, Pakistan (Sohail Agha et al.,2019)

Following main domains were used to assess the quality of care of maternal and newborn around time of birth. Domains are given below:

I. Regulation of SOPS by providers.

II. Consent of mothers before any proceedings.

III. Checking vitals of mothers continuously.

IV. Checking baby's position V. Checking fetal heart rate.

VI. Provision of essentials at bedside around the time of birth.

VII. Visual barriers for mothers.

VIII. Assistance of workers.

IX. Mother satisfaction.

X. Baby's checkup right after delivery.

3.9.2 Independent Variable:

Data on independent variables was collected through a self-administered questionnaire that is constructed after international and national literature review. The Performas included

sociodemographic variables such as gender, age, working status of mothers etc. Similarly same sociodemographic features were included for HCP.

Dependent variables ⟶ **Provision of QOC to mothers and newborns.**

Independent variable ⟶ **Socio demographic features of mothers and HCP.**

3.10 Reliability and validity:

The adopted questionnaire is dedicated, authorial and internally consistent, stable and reliable tool. The Cronbach's alpha of questionnaire is 0.7 while the validity was assessed by pilot testing; the questionnaire was pre-tested for its completeness and correctness before the final data collection process.

3.11 Data Collection Process:

3.11.1 Pilot Testing:

Pilot testing was performed before starting the formal data collection procedure by including 10% (N=30) for questionnaire No.1 that was for mothers and 10% (N=10) for HCP of the actual sample size. Questionnaire was tested for any future changes, no major changes were made after pilot testing. One part from mothers questionnaire was removed that was about the history of mothers regarding cousenagious marriages and any health issues. After pilot testing separate sections were made for QOC of mothers and newborns which were combined before.

3.11.2 Cronbach's alpha:

The Cronbach's alpha of questionnaire is 0.7. Data from pilot testing was not included in final analysis.

Reliability Statistics

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
	.781	.727	30

3.11.3 Formal data collection

Data was collected by the researcher herself and no data collectors were hired. All the mothers coming for delivery who met inclusion criteria were included in the study. All the health care providers working in gynae ward were given the questionnaires to fill by themselves after asking their consent and all the mothers were interviewed by the researcher herself. Consent was taken from all mothers and healthcare providers who take part in the research process. After taking consent, mothers were interviewed after asking their consent and questionnaires were given to only those HCPs who agreed to take part in the research process. Data collection was completed in almost two months. No one other than the researcher had access to the questionnaires.

3.12 Data Analysis Procedure:

The Statistical Program for the Social Sciences (SPSS) version 17 was used for both code book creation and data entry. After entering the data, we double reviewed it to make sure it was accurate before continuing with the analysis. Several variables were transformed in the data after it was cleaned. We used a two-pronged approach to analyzing the data: first, a descriptive analysis, and then an inferential analysis.
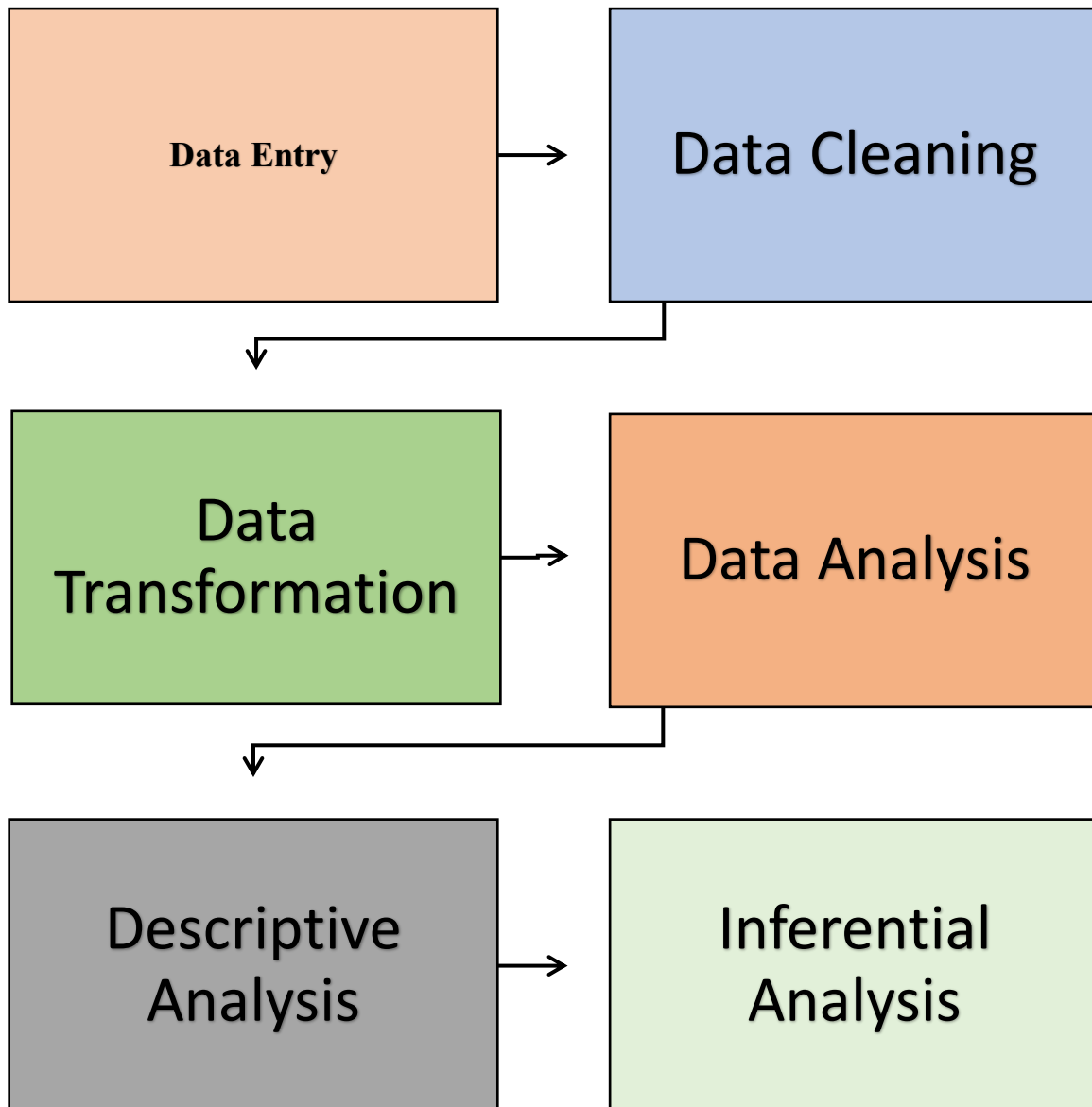
Figure 6: Data Analysis Plan on SPSS Version 17.

3.13 Descriptive Analysis:

Socioeconomic characteristics were derived as descriptive statistics. Tabular summaries of data were created using frequency and percentage calculations for categorical variables. Since the

data was regularly distributed, continuous variables were summarized by mean and standard deviation.

3.14 Ethical Considerations:

Institutional Review Board (IRB) permission was obtained from the Al-Shifa School of Public Health in Rawalpindi, Pakistan before any official data collecting could begin. Access to public and private health facilities in Chakwal city was authorized by a letter from the Head of Department at Al-Shifa School of Public Health. Permission to perform this study was obtained from the public and private hospitals, birthing women, and healthcare providers in Chakwal, Pakistan. Each participant gave verbal agreement after being informed of the study's goals. The anonymity of the participants' responses was guaranteed. The acquired information was kept confidential and never revealed to the responders. When participants gave their informed permission, they were kept anonymous and their confidentiality was protected. The SPSS data entry was done in complete secrecy. No data that might be used to identify someone was gathered. Everyone who participated in the research was free to leave at any moment. After being entered digitally, the data's physical copies were stored away securely. Only approved users were granted access to the data.

CHAPTER 4: RESULTS AND DISCUSSION

Health care providers' socio-demographic profile:

A total of 104 health care providers participated in this study for assessing quality of care and comparing their socio demographic to the provision of quality of care. Chi square was run to check the association of sociodemographic factors of health care providers of private and public sector. Percentage of the study individuals belonging to private and public sector has been summarized in table 1 and f figure 7-12. 52 HCP were selected from DHQ Chakwal and 52 from four private clinics 13 HCPs were selected from each clinic. Out of 52 in DHQ 11.5% were medical officers and 11.5% were house officers ,13.5% were consultant gynecologists, 42.3% were nurses, 15.4% were LHWs and 5.8% were FCPS/MCPS trainee.

Table 1: Health care providers in public and private health care facilities of Chakwal.

Parameters	Health Care Facility		Total (n=104)
	Public Sector (n=52)	**Private Sector(n=52)**	
Age (Years)			
20-30	24 (46.2%)	13 (25%)	37 (35.6%)
31-40	11 (21.2%)	16 (30.8%)	27 (26%)
41-50	13 (25%)	16 (30.8%)	29 (27.9%)
50+	4 (7.7%)	7 (13.5%)	11 (10.6%)
Marital status			
Unmarried	24 (42.2%)	13 (25%)	37 (35.6%)
Married	25 (48.1%)	33 (63.5%)	58 (55.8%)
Divorced	2 (3.8%)	2 (3.8%)	4 (3.8%)
Widow	1 (1.9%)	4 (7.7%)	5 (4.8%)
Residence			
Rural Urban	25 (48.1%)	18 (34.6%)	43 (41.3%)
	27 (51.9%)	34 (65.4%)	61 (58.7%)
Job title			
Medical office	6 (11.5%)	5 (9.6%)	11 (10.6%)
House officer	6 (11.5%)	10 (19.2%)	16 (15.4%)
Gynaecologist	7 (13.5%)	10 (19.2%)	17 (16.3%)
Nurse lady health	22 (42.3%)	16 (30.8%)	38 (36.5%)
worker	8 (15.4%)	7 (13.5%)	15 (14.4%)
FCPS/MCPS trainee	3 (5.8%)	4 (7.7%)	7 (6.7%)
Years of experience			
<1	16 (30.8%)	8 (15.4%)	24 (23.1%)
1-2	14 (26.9%)	17 (32.7%)	31 (29.8%)
3-4	13 (25%)	23 (44.2%)	36 (34.6%)
>5	9 (17.3%)	4 (7.7%)	13 (12.5%)
Job satisfaction			
Very Satisfied	11 (21.2%)	4 (7.7%)	15 (14.4%)
Satisfied	25 (48.1%)	18 (34.6%)	43 (41.3%)
Neutral	7 (13.5%)	17 (32.7%)	24 (23.1%)
Dissatisfied	6 (11.5%)	9 (17.3%)	15 (14.4%)
Extremely dissatisfied	3 (5.8%)	4 (7.7%)	7 (6.7%)
Salary			
20-40k	28 (53.8%)	29 (55.8%)	57 (54.8%)
40-60k	9 (17.3%)	18 (34.6%)	27 (26%)
60-80k	7 (13.5%)	1 (1.9%)	8 (7.7%)
80+	8 (15.4%)	4 (7.7%)	12 (11.5%)

Figure 7: Age of health care providers in public and private health care facilities of Chakwal.
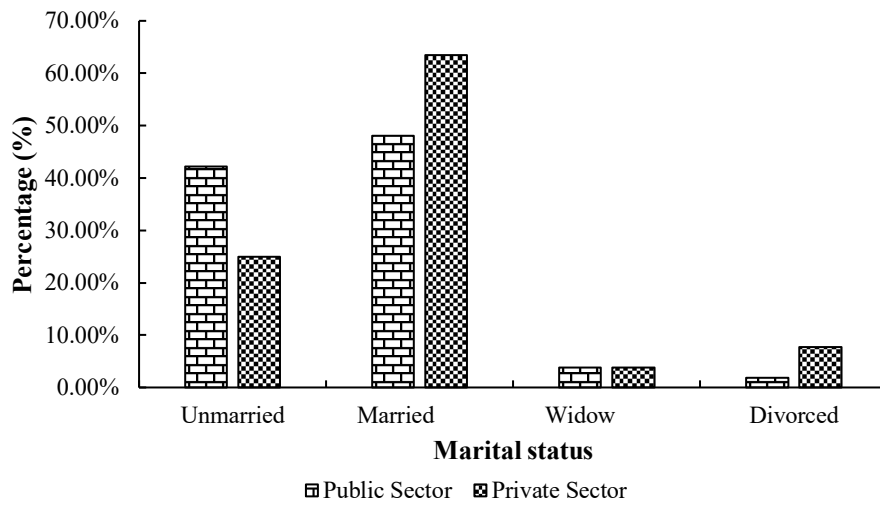
Figure 8: Marital status of health care providers in public and private health care facilities of Chakwal.

Figure 9: Residence of health care providers in public and private health care facilities of Chakwal.
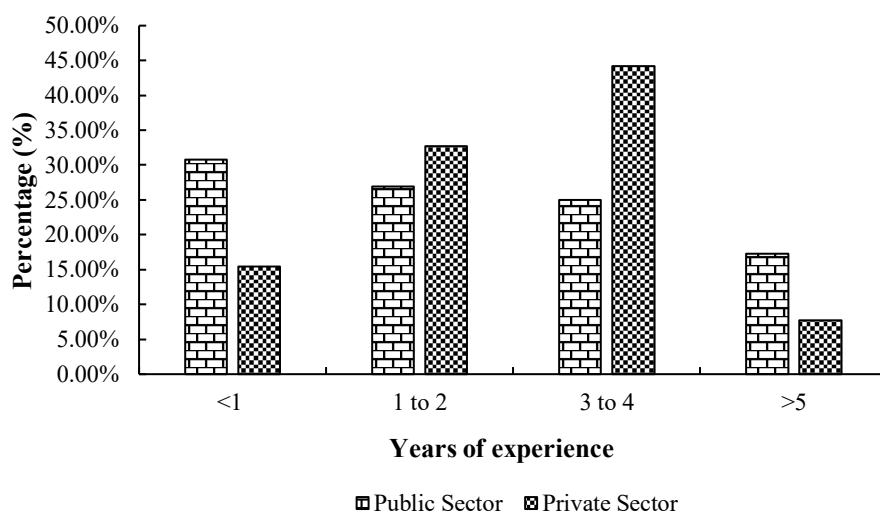
Figure 10: Years of experience of health care providers in public and private health care facilities of Chakwal.

Figure 11: Job satisfaction in health care providers in public and private health care facilities of Chakwal.

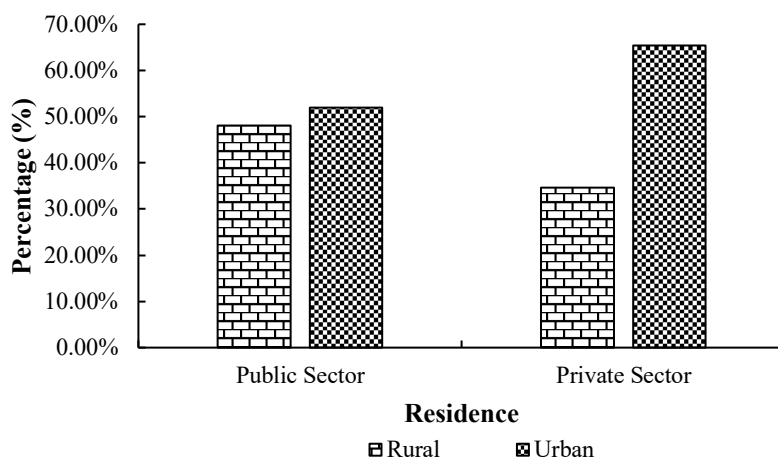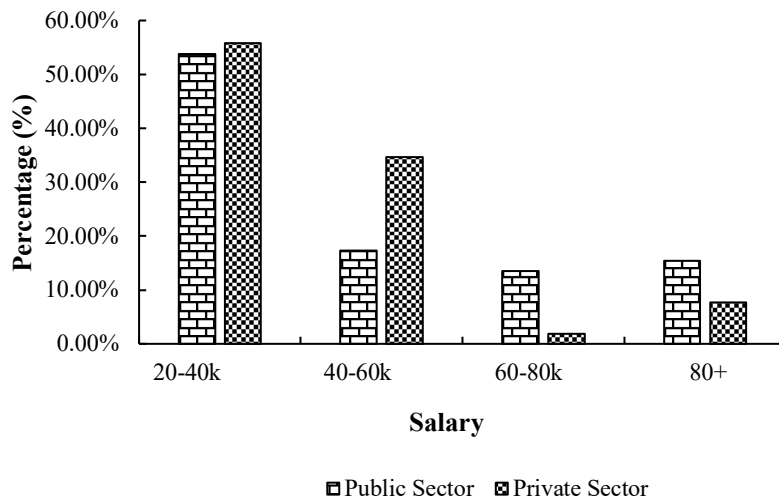**Figure 12: Salary of health care providers in public and private health care facilities of Chakwal.**

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HCP behavior towards mothers and hospital infrastructure:

In the table 2 and figure 13 HCP behavior towards mothers and hospital infrastructure and management in public and private clinics has been explained. According to the results different variables shed significant difference between both sectors such as listening every woman health issue attentively (p=0.002), providing emotional support to strengthen women capability at time of labour (p=0.04), shouting at mother when she doesn't follow the instructions (p<0.001), Water, sanitation, hand hygiene and waste disposal facilities with p=0.01.

Table 2: Role of health care providers in public and private health care facilities of Chakwal.

Parameters	Health Care Facility		Total (n=104)	Chi Square /Fisher's Exact Value	p value
	Public Sector (n=52)	Private Sector (n=52)			
Health complications					
Yes	24	22	46	0.16	0.69
No	28	30	58		
Treating with respect					
Yes	49	50	99	0.25	0.67
No	3	2	5		
Listening attentively					
Yes	43	52	95		
No	9	0	9	9.85	0.002**
Emotional support					
Yes	42	49	91		
No	10	3	13	4.31	0.04*
Shouting at mother					
Yes	40	13	53		
No	12	39	51	28.04	<.0001***
Informed choices					
Yes	48	48	96		
No	4	4	8	0.00	1.00

Facilities					
Yes	46	52	98		
No	6	0	6	6.37	**0.01****
Adequate stocks					
Yes	43	45	88		
No	9	7	16	0.29	0.58
Facility protocols					
Yes	41	43	84		
No	11	9	20	0.25	0.62
Training and sessions					
Yes	22	20	42		
No	30	32	62	0.16	0.68

Notes:-
*P < .05
**P < .01
***P < .0001

Figure 13: Role of health care providers in public (inner circle) and private (outer circle) health care facilities of Chakwal.
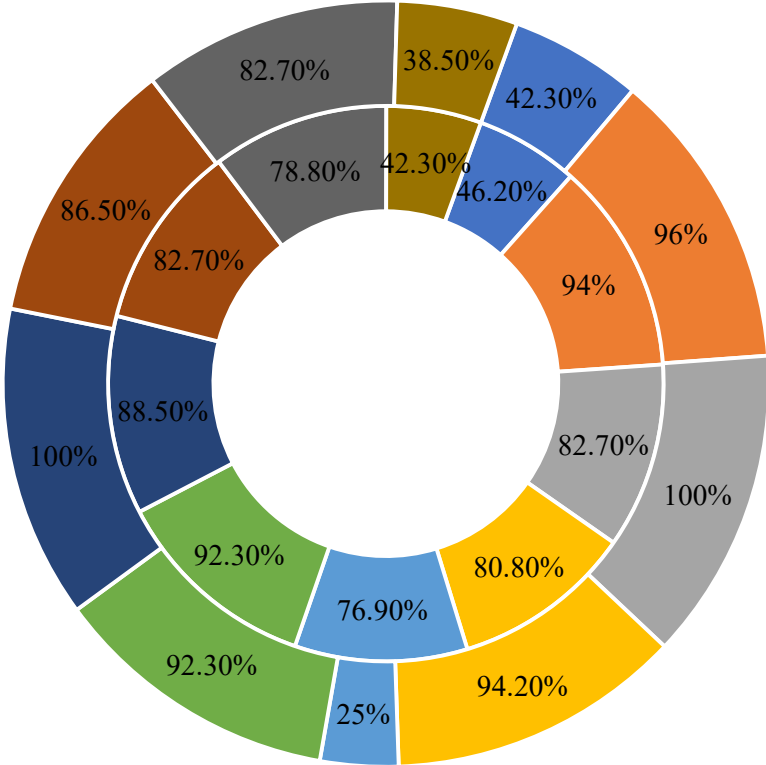
- Health complications
- Treating every woman with respect and dignity
- Listening every woman health issue attentively
- Providing emotional support to strengthen women capability at time of labour
- Shouting at mother when she doesn't follow the instructions
- Giving mother informed choices about services
- Water, sanitation, hand hygiene and waste disposal facilities
- Availability of adequate stocks of medicines
- Written up to date health facility protocols
- Availability of in-service training and regular refresher sessions

Mother socio demographics:

In the study total 296 mothers were selected for assessing quality of care. 148 were from DHQ and 148 were from four private clinics 37 from each clinic. In table 3 and figure 14-19 mother sociodemographic association was observed between public and private health facilities.

Table 3: Mother socio demographics in public and private health care facilities of Chakwal.

Parameters	Health Care Facility		Total
	Public Sector (n=148)	**Private Sector (n=148)**	**(n=296)**
Age (Years)			
18-25	54 (36.5%)	53 (35.8%)	107 (36.1%)
26-32	46 (31.1%)	46 (31.1%)	92 (31.1%)
33-39	39 (26.4%)	41 (27.7%)	80 (27%)
40+	9 (6.1%)	8 (5.4%)	17 (5.7%)
Residence			
Rural	68 (45.9%)	69 (46.6%)	137 (46.3%)
Urban	80 (54.1%)	79 (53.4%)	159 (53.7%)
Education			
Primary	40 (27%)	38 (25.7%)	78 (26.4%)
Middle	46 (31.1%)	36 (24.3%)	82 (27.7%)
Secondary	42 (28.4%)	49 (33.1%)	91 (30.7%)
Higher	20 (13.5%)	25 (16.9%)	45 (15.2%)
Employment status			
Employed	10 (6.8%)	11 (7.4%)	21 (7.1%)
Unemployed	138 (93.2%)	137 (92.6%)	275 (92.9%)
Husband's employment			
Employed	87 (58.8%)	107 (72.3%)	194 (65.5%)
Unemployed	61 (41.2%)	41 (27.7%)	102 (34.5%)
Husband salaries			
15-25k	57 (38.5%)	43 (29.1%)	100 (33.8%)
25-45k	54 (36.5%)	62 (41.9%)	116 (39.2%)
45-55k	18 (12.2%)	15 (10.1%)	33 (11.1%)
55k +	19 (12.8%)	28 (18.9%)	47 (15.9%)

Figure 14: Age of mothers in public and private health care facilities of Chakwal.
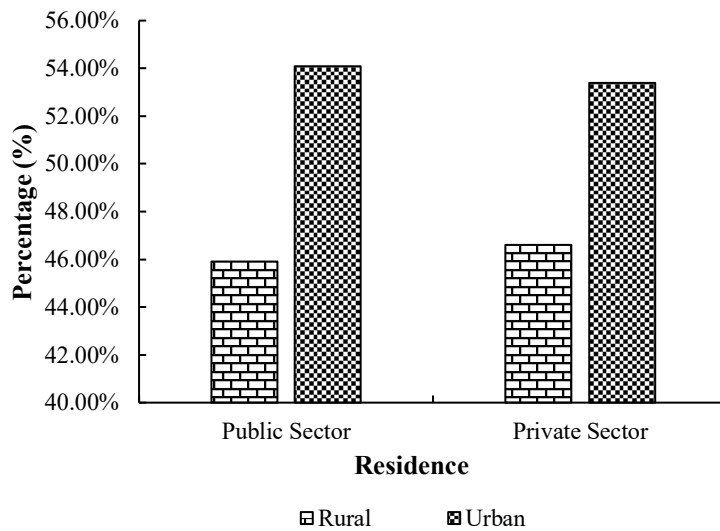
Figure 15: Residence of mothers in public and private health care facilities of Chakwal.

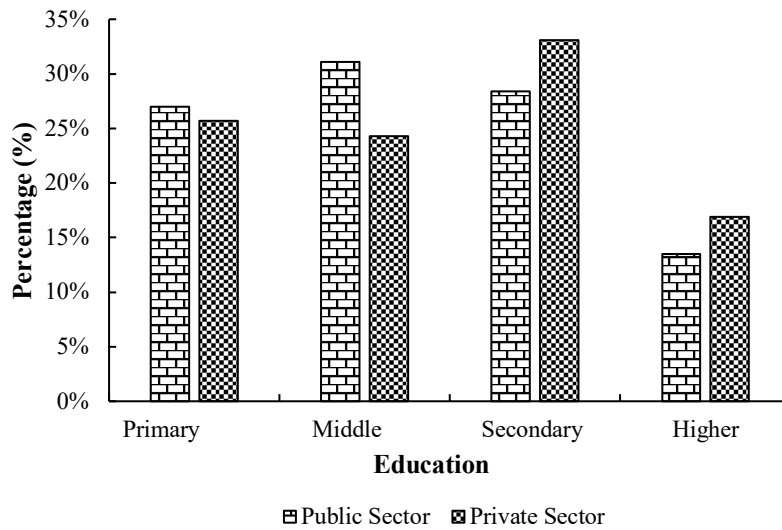**Figure 16: Education of mothers in public and private health care facilities of Chakwal.**
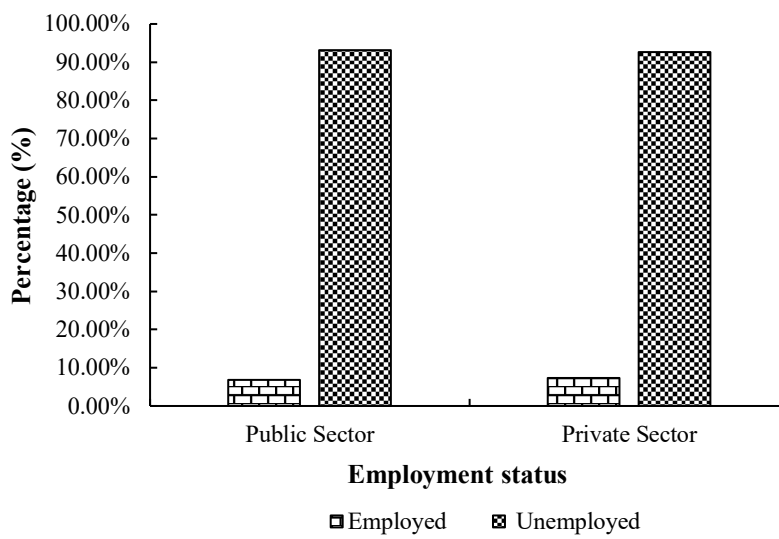
Figure 17: Employment status of mothers in public and private health care facilities of Chakwal.
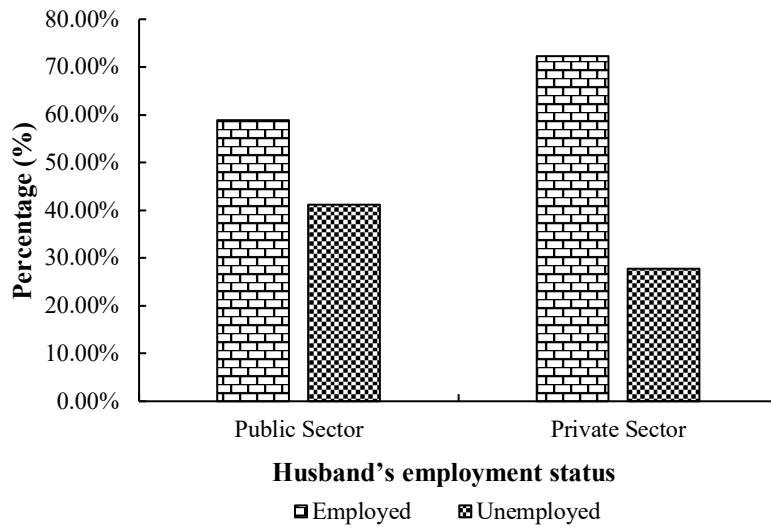
Figure 18: Employment status of mother's husbands in public and private health care facilities of Chakwal.
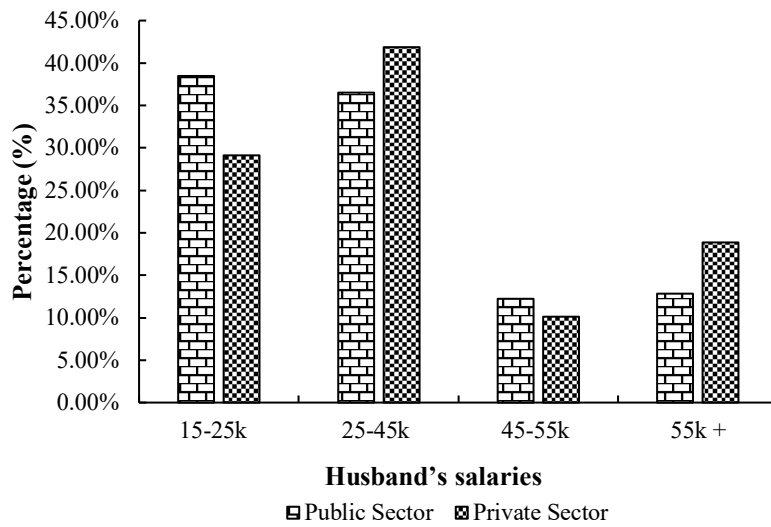
Figure 19: Salaries of mother's husbands in public and private health care facilities of Chakwal.

Maternal quality of care:

Both the governmental and private clinics in Chakwal have been found to provide high-quality treatment to mothers. The table 3 distribution shows that the samples were spread out evenly. The factors, include whether or not the provider washes their hands with soap and water or uses an alcohol rub before the first examination (p=0.01). Fetal presentation was verified with abdominal palpation (p=0.03). Using curtains or visual barriers to shield women during exams, births, and procedures has shown a significant difference in maternal quality of care between public and private health care facilities in Chakwal (p=0.08), and mother satisfaction with staff behavior has shown a significant difference (p0.001). (Table 4 and figure 20).

Table 4: Maternal quality of care in public and private health care facilities of Chakwal.

Parameters	Health	Care	Total (n=296)	Chi Square /Fisher's	p value
	Facility				
	Public Sector (n=148)	Private Sector (n=148)		Exact Value	
Washing hands					
Yes	127	140	267		
No	21	8	29	6.46	**0.01****
Informed procedures					
Yes	146	144	290		
No	2	4	6	0.68	0.40
Consent of mother					
Yes	136	139	275		
No	12	9	21	0.46	0.49
Vitals of mother					
Yes	145	146	291		
No	3	2	5	0.20	0.65
Fetal presentation					
Yes	139	146	285		
No	9	2	11	4.62	**0.03***
Fetal heart rate					

Yes	134	141	275	2.51	0.11
No	14	7	21		
Essential supplies					
Yes	144	146	290	0.68	0.40
No	4	2	6		
Visual barriers					
Yes	145	148	293	3.03	0.08
No	3	0	3		
Health workers					
Yes	144	146	290	0.68	0.40
No	4	2	6		
Support person					
Yes	144	145	289	0.14	0.70
No	4	3	7		
Vitals after birth					
Yes	131	145	276	10.51	**0.001****
No	17	3	20		
Services satisfaction					
Yes	144	142	286		
No	4	6	10	0.41	0.52
Behavior satisfaction					
Yes	120	144	264		
No	28	4	32	20.18	**<.001****

Notes:-
*P < .05
**P < .01
***P < .0001

Figure 20: Maternal quality of care in public (inner circle) and private (outer circle) health care facilities of Chakwal.
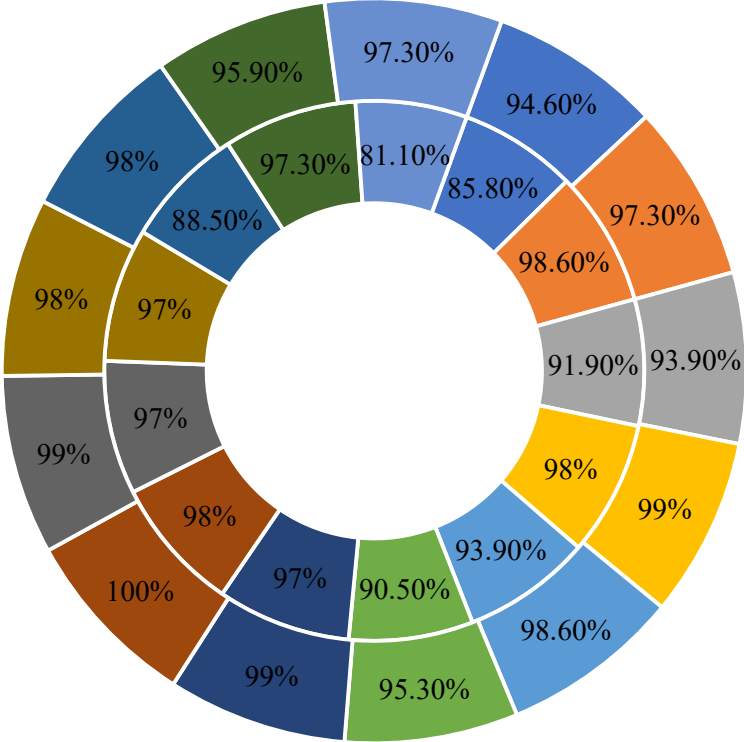
- washing hands with soap and water or uses alcohol rub before any initial exam by the provider
- Informed mothers about all necessary procedures during labour and childbirth
- Consent was asked before performing the procedures during delivery
- Vitals were done. (bp/temp./pulse)
- Checked fetal presentation by palpation of abdomen
- Checked fetal heart rate with fetoscope/doppler/ultrasound
- Essential supplies were bedside for delivery
- Using curtains/ visual barriers to protect woman during exams, births, and procedures
- More than one health worker assisted with the birth
- Support present for mothers
- Taking mother vitals (b.p, temp.) 15 minutes after birth
- Was mother satisfied with the services?
- Was mother satisfied with staff behavior?

New-born quality of care:

New-born quality of care was observed in both public and private clinics of Chakwal. There was significant difference in parameters such as checking baby's temperature 15 minutes after birth **(p<0.001),** did mother get training for breastfeeding from staff? **(p<0.001),** weigh baby and documents the weight **(p<0.001) and** vaccination after birth **(p<0.001)** in new-born quality of care between public and private health care facilities of Chakwal (Table 5 and figure 21).

Table 5: Newborn quality of care in public and private health care facilities of Chakwal.

| Parameters	Health Care Facility		Total (n=296)	Chi Square /Fisher's Exact Value	p value
	Public Sector (n=148)	Private Sector (n=148)			
Temperature					
Yes	124	145	269		
No	24	3	27	17.97	**<.001****
Skin color					
Yes	146	147	293		
No	2	1	3	0.33	0.56
Referral					
Yes	5	3	10	0.21	1.00
No	143	145	286		
Breastfeeding training					
Yes	0	20	20	21.44	
No	148	128	276		**<.001****
Screening of newborn					
Yes	4	5	9		
No	144	143	287	0.11	0.73
Weigh baby					
Yes	118	148	266		
No	30	0	30	33.38	**<.001****
Vaccination after birth					
Yes					
No	124	144	268	15.78	**<.001****
	24	4	28		

Notes:-
*P < .05
**P < .01
***P < .0001

Figure 21: New-born quality of care in public (inner circle) and private (outer circle) health care facilities of Chakwal.
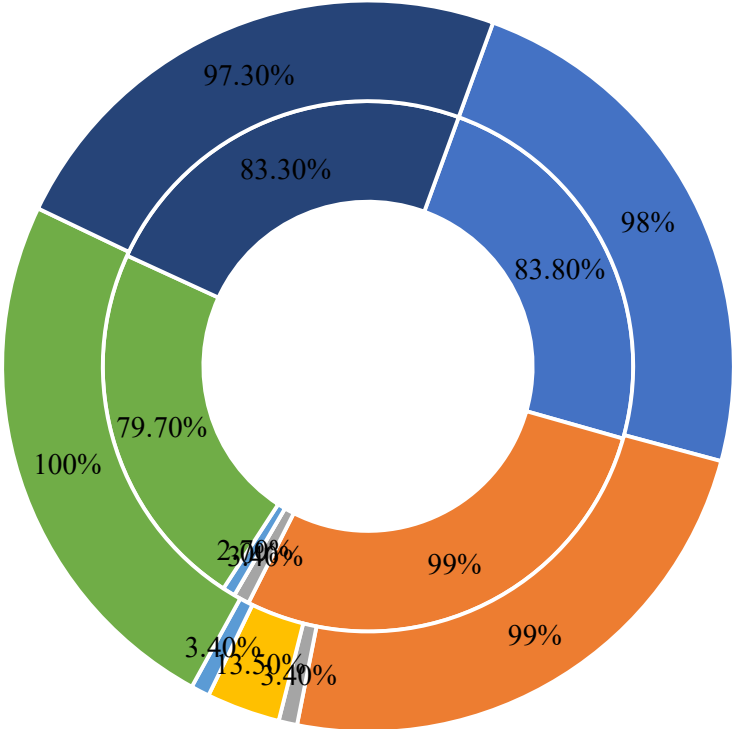
- Checked baby's temperature 15 minutes after birth
- Checked baby's skin color 15 minutes after birth
- Did baby need referral?
- Did mother get training for breastfeeding from staff?
- Screening of newborn for any kind of abnormality
- Weigh baby and documents the weight
- Vaccination after birth

CHAPTER 5: DISCUSSION

These results provide significant light on the quality of care given to women during and immediately after childbirth. The purpose of these findings was to observe to what extent the HCP are following the WHO standards.

In current findings the age of HCP between 20-30 was 5.6%, 31-40 was 26%, 41-50 was 27.9% , 50+ was 10.6% as compared to the previous study in which it was HCP aged between 30–35 was 46.7%, 36–40 was 31.7%, >40 was 21.7% (Omer et al., 2021). The marital status of HCP in my findings unmarried was 35.6%, married 55.8%, divorced 3.8%, widow 4.8% while in the previous study it was 70% for married and 30% for unmarried. (Omer et al., 2021).

Work experience in previous study in gynaecology/obstetric ward (in years) 5–10 was 1.7%, 11–15 was 53.3% , >15 was 45.% (Omer et al., 2021) while in my findings <1 year was 23.1%, 1-2 years was 29.8%, 3-4 years was 34.6%, >5 years was 12.5%.

Monthly income (in PKR) 50,000–75,000 was 58.3%, 76,000–100,000 was 22.2%, >100,000 was 19.5%,100,000–125,000 was 43.3%, 126,000–140,000 was 30% ,>140,000 was 26.7% (Omer et al., 2021) while in recent findings 20-40k was 54.8%, 40-60k was 26%, 60-80k was 7.7%, 80+ was 11.5%.

Abuse and disrespect during delivery is a public health issue since it violates the rights of both the mother and the unborn child. Abuse and disrespect meted out to mothers in hospitals during delivery is a worldwide issue (WHO,2014). It's a prevalent issue in maternal health care, and it's responsible for a lot of unnecessary suffering and prevents women from getting the help they need when they need it. Birth-related violence against women and the desertion of pregnant women are global issues (Bowser D et al.,2010). In current study it was observed to what extent the standards of WHO were being followed while dealing with mothers, in which treating women with respect and dignity, listening their health issues attentively, provision of

emotional support, shouting at mother, informed decisions and management of hospital was included (WHO,2016).

The percentage of women in resent findings aged between 18-25 was 36.1% as compared to previous study in which <20 years women's percentage was 4.1% (Aziz et al., 2020). The percentage of women in my findings aged between 26-30 was 31.1% compared to the previous study in which women aged between 20-35 years percentage was 90.4% (Aziz et al., 2020). The women aged between 33-39 years in my findings was 27% and 40+ years percentage was 5.7% while in previous study >35 years women percentage was 5.5% (Aziz et al., 2020).

The education in current findings of women with percentages was primary 26.4%, middle 27.7%, secondary 30.7%, higher 15.2%. While in previous study it was 82.6% with no formal education, primary 7.9%, secondary 7% and university 2.5%. (Aziz et al., 2020).

The hospitals included in resent studies was in equal ratio of (148)50% public and 149(50%) was given to 4 private clinics sample size was 37 given to each clinic. While in previous study it was 27.8% for public and 72.2% was for private (Agha et al., 2019).

Factors influencing health-related behaviors may be located in a variety of settings, which is a well acknowledged phenomena. They might be of a material, interpersonal, monetary, or cultural character (Shaikh et al., 2005). The situation is no different when it comes to maternity healthcare in rural Pakistan. Maternal mortality in South Punjab was found to be affected by a number of sociocultural factors, including a first delay in decision-making (delay in seeking care) about appropriate maternal care. (Thaddeus S et al.,1994).

There was a 90% rate of hand washing, a 97% rate of informed procedures, a 92% rate of mother consent, a 96% rate of checking the fetal presentation, a 92% rate of checking the fetal heart rate, a 97% rate of having all necessary supplies at the bedside, a 98% rate of not having any visual barriers, a 97% rate of having more than one health worker present, a 90% rate of taking vitals after delivery, a 93% rate of mother satisfaction Woman (and support person, if

present) are informed of upcoming operations (25.8%); 11.7% take temperature, 12.1% take pulse, 39.5% take blood pressure, 31.5% perform general examination (e.g. for anemia), 18.5% measure fundal height, 49.6% palpate abdomen to assess fetal presentation, 39.9% use fetoscope/doppler/ultrasound to assess fetal heart rate, 62.9% use sterile gloves during vaginal examination, 27.4% wash hands with soap and water, 26.3% take mother's vital signs Support person was present at some point throughout labor (90.4%), and curtains/visual barriers were used to shield the lady (40.6% of the time) during examinations, deliveries, and operations (Sohail Agha et al.,2019).

In recent findings regarding the newborn quality of care in which baby's temperature was checked right after 15 minutes of birth is 90%, skin color checking was 97%, need for baby's referral was 3.4%, breast feeding training was 13.5% in one private clinic only while in DHQ it was 0%, screening for newborn for any complications was 3%, checking weight of baby was 89%, vaccination was 90% while in previous study Checks baby's temperature, by touch, 15 minutes after birth 13.3%, Checks baby's skin color 15 minutes after birth 20.0%, Weighs baby and documents the weight 13.3% (Agha et al., 2019).

Study strengths and limitations:

Our research adds to the existing body of knowledge since it may be the first to document the delivery of MNH care at the point of contact in a clinical environment in Pakistan. Selfadministered questionnaires were used to compile the data. The findings give estimates of how well clinical practices align with generally recognized norms. This study provides information on both the public and private sectors of care provision in Chakwal, whereas previous QoC research has only focused on public sector factors. Care providers may perform better than usual when they know they are being observed, a phenomenon known as the "Hawthorne Effect," which undermines the accuracy of measurements made through direct observation of care delivery (especially in settings with poor record-keeping). Since this is the

best-case scenario, our study's findings are even more startling given the state of health care in Chakwal. The higher refusal rate in private sector facilities compared to public sector facilities is a limitation of this study. It is difficult to collect data from private maternal and child health facilities in Chakwal due to the lack of regulation in the private health sector in Pakistan.

Conclusion:

Pakistan lies in LMICs and responsible for almost 20% of the regional maternal mortality and contribute 7% of neonatal mortality globally. After assessing the maternal and newborn quality of care in Chakwal city I observed that majority of mothers are not that much educated regarding maternal care so they are un aware what quality of care they deserve and what they are being provided with. So the major drawback is about awareness. The quality of care in Chakwal city is lacking the facilities of dealing with severe emergencies. They refer the patients to Rawalpindi in case of emergency. There is significant difference between the public and private healthcare facilities regarding maternal and newborn care as shown in results. There is still need of many improvements to make the system stronger. The widespread lack of adherence to recommended protocols in all settings calls for an examination of the factors that allow untrained assistants to play such a large role in patient care, and the identification of the specific solutions combining supervision and accountability with provider behavior change that are required to bring about the desired outcomes.

Recommendations:

After the research there were few things that were observed, and some recommendations are suggested according to problems:

Health System Level:

In DHQ there is lack of doctors, patients come in number of hundreds daily and patients have to wait for hours for their turn. So this issue must be considered and solved. There is lack of beds in

DHQ due to which on each bed they keep two to three mothers at a time that is unbearable and very common situation in Govt. hospitals in Pakistan. Infact the present beds in DHQ is not even in good condition they have put the bricks for support to broken legs of bed that was extremely uncomfortable for mothers.

Health Care Provider Level:

Training is necessary for nurses or any other type of HCP but this thing needs to be understood that they should not be allowed to start training directly at labour or delivery rooms without proper supervision. I observed a lot of mishaps during the study just because of these people getting trained at hospital. At that time mother needs a good care and good management not a subject to get trained on, if this needs to be done then there should be proper supervision to tackle with any situation.

Patient Level:

The common observation in this study was lack of awareness among people regarding the quality of care. Mothers mostly were not that much educated they needs to be to understand the quality of services they deserved to receive. After a lot of issues, they were still satisfied and happy just to be delivering in hospital. So, education is foremost priority regarding this issue.

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Annexure A- Questionnaire

QUESTIONAIRE FOR HEALTH CARE PROVIDERS

ASSESMENT OF MATERNAL AND NEWBORN QUALITY OF CARE AROUND TIME OF BIRTH IN PUBLIC AND PRIVATE HOSPITALS OF CHAKWAL

Part A (Health care provider)

SECTION A

1. Age?
   a) 20-30 years   b) 31-40 years
   c) 41-50 years   d) 50+ years

2. Gender?
   a) Male   b) Female

3. Marital status
   a) Unmarried   b) Married   c) Widow   d) Divorced

4. Residence
   a) Rural   b) Urban

5. Job title?
   a) Medical officer   b) House officer   c) Consultant gynaecologist
   c) Nurse   d) lady health worker   d) FCPS/MCPS trainee

6. Medical formation
   a) Public   b) Private

7. Years of experience
   a) <1 year   b)1-2 years   c) 3-4 years   d) >5 years

8. Job satisfaction
   a) Very Satisfied   b) Satisfied   c) Neutral
   d) Dissatisfied   e) Extremely dissatisfied

9. Salary
   a) 20-40k   b) 40-60k   c) 60-80k   d) 80+

10. Any health complications
    a) Yes   b) No

SECTION B

11. Do you treat every woman with respect and dignity?

      a) Yes   b) No

12. Do you listen every woman health issue attentively?

      a) Yes   b) No

13. Do you provide emotional support to strengthen women capability at time of labor?

        a) Yes   b) No

14. Do you shout at mother when she doesn't follow your instructions?

    a) Yes   b) No

15. Do you give mother informed choices about services?

    a) Yes   b) No

SECTION C

16. Water, sanitation, hand hygiene and waste disposal facilities are functional, reliable, safe, and sufficient to meet the needs of staff, women and their families?

      a) Yes   b) No

17. Adequate stocks of medicines available for routine care and for management of complications?

    a) Yes   b) No

18. Health facility has written up to date protocols for assessing care and action?

      a) Yes   b) No

19. In-service training and regular refresher sessions are available?

    a) Yes   b) No

QUESTIONAIRE FOR MOTHERS

ASSESMENT OF MATERNAL AND NEWBORN QUALITY OF CARE AROUND TIME OF BIRTH IN PUBLIC AND PRIVATE HOSPITALS OF CHAKWAL

Part B (Mothers) Section

A (Mother socio demographics)

12. Age

a)18-25 years   b) 26-32 years   c) 33-39 years   d) 40+

13. Residence

       a) Rural   b) Urban

14. Education

a) Primary   b) Middle   b) Secondary   d) Higher

15. Employment status

       a) Employed   b) Unemployed

16. Husband employment status

       a) Employed   b) Unemployed

17. Husband salary

       a) 15-25k   b) 25-45k   c) 45-55k   d) 55k +

Section B (Maternal QOC)

18. Does provider washes hands with soap and water or uses alcohol rub before any initial exam?

       a) Yes   b) No

19. I was informed about all necessary procedures during my labour and childbirth.

       a) Yes   b) No

20. My consent was asked before performing the procedures during delivery

       a) Yes   b) No

21. Vitals were done. (bp/temp./pulse)

       a) Yes   b) No

22. Checks fetal presentation by palpation of abdomen

       a) Yes   b) No

23. Checks fetal heart rate with fetoscope/doppler/ultrasound

       a) Yes   b) No

24. Are essential supplies are at bedside for delivery?

       a) Yes   b) No

25. Uses curtains/ visual barriers to protect woman during exams, births, and procedures

       a) Yes   b) No

26. More than one health worker assisted with the birth?

     a) Yes   b) No

27. Support present for mother?

     a) Yes   b) No

28. Takes mother vitals (b.p,temp.) 15 minutes after birth?

     a) Yes   b) No

29. Is mother satisfied with the services?

     a) Yes   b) No

30. Is mother satisfied with staff behavior?

     a) Yes   b) No

Section C (Newborn QOC)

31. Check baby's temperature 15 minutes after birth

     a) Yes   b) No

32. Check baby's skin color 15 minutes after birth

    a) Yes   b) No

33. Does baby need referral?

    a) Yes   b) No

34. Did you get training for breastfeeding from staff?

    a) Yes   b) No

35. Screening of newborn for any kind of abnormality

    a) Yes   b) No

36. Weighs baby and documents the weight

    a) Yes   b) No

37. Vaccination after birth

    a) Yes   b) No

Annexure B -consent form

Title of Research:

Assesment of maternal and newborn quality of care around time of birth in public and private hospitals of chakwal

Researcher Name: Bibi Zahida

Email: zahidanawroz@gmail.com

Cell no: 03065621119 Purpose

of Research:

Mandatory submission in partial fulfillment of the requirement for the Master's degree in

-

Public Health from Quaid e Azam University, Islamabad.

Certificate of Consent:

I have read and understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Respondent 'signature:

Identification no:

Dated:

Statement of Confidentiality:

The information provided by you shall be anonymous. Researcher is obliged to preserve your confidentiality in the following way:

- Code numbers will be assigned which would be used on all documents included in study.

- Questionnaires returned shall be kept safe with access only to the principal researcher.

- Virtual data files shall be kept separately in an external hard drive, password protected.

- And shall be used for the purpose of study only.

- Any information before withdrawal shall be deemed good for including in the study.

- Following may use the health information provided by you in connection with this study.

The principal researcher

Research Supervisor

Institutional Review Board Al-Shifa School of Public Health

Annexure C- IRB letter

AL-SHIFA SCHOOL OF PUBLIC HEALTH
PAKISTAN INSTITUTE OF OPHTHALMOLOGY
AL-SHIFA TRUST, RAWALPINDI

MSPH-IRB/14-13
27ᵗʰ Sep, 2022

TO WHOM IT MAY CONCERN

This is to certify that **Bibi Zahida** D/O **Nawroz Ali** is a student of Master of Science in Public Health (MSPH) final semester at Al-Shifa School of Public Health, PIO, Al-Shifa Trust Rawalpindi. He/she has to conduct a research project as part of curriculum & compulsory requirement for the award of degree by the Quaid-i-Azam University, Islamabad. His/her research topic which has already been approved by the Institutional Review Board (IRB) is **"Assessment of maternal and new born quality of care around time of birth in public and private hospitals of Chakwal"**.

Please provide his/her necessary help and support in completion of the research project. Thank you.

Sincerely,

Dr. Ayesha Babar Kawish
Head
Al-Shifa School of Public Health, PIO
Al-Shifa Trust, Rawalpindi

Annexure D- Budget

BUDGET ITEM	TRANSPORT	STATIONARY & INTERNET	PRINTING	PUBLISHING
Pilot testing	2000/-	5500/-	4000/-	-
Data collection	10000/-	7500/-	-	-
Thesis write up	3000/-	8500/-	6000/-	20000/-
Total expenditure	15000/-	22500/-	10000/-	20000/-
Grand total	67500/-			

Annexure E- Gantt chart

Activities	September 2022	October 2022	November 2022	December 2022	January 2023	February 2023	March 2023
Literature search	███	███	███	███	███		
Synopsis writing & IRB approval	███	███					
Pilot testing			███				
Data collection & entry				███	███		
Data analysis					███		
Write up			███	███	███	███	
Thesis submission							███