



# The Effects of Socio-Cultural Challenges of Lady Health Workers on their Psychological Wellbeing in Multan

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Abstract: Vaccine is a revolutionary tool to fight various diseases. It is made by weakening the disease-causing organism and administrating into the body. Vaccination activates the immune system to produce lifelong antibodies, protecting against future infections. It is a cost-effective, safe public health strategy to prevent life-threatening diseases, reducing treatment costs and the risk of complications such as paralysis. Public health concepts struggle in underdeveloped areas, with varying perceptions about vaccination and preventive treatments. This study was performed with an aim to understand how socio-cultural factors affect the perception of people about vaccination from the perspective of vaccinators. The area chosen for the study was Multan district of southern Punjab region inhabiting mostly lower- and middle-class population. To conduct the study, 18 vaccinators were interviewed who were the government employees under the supervision of Executive District Office of Health. The regional language of the area is "Saraiki" and all the interviews were conducted in the Saraiki and Urdu language, Urdu being the national language. As the researcher belongs to the same area, there was no need of a translator to conduct interviews. Interviews were recorded in audio format, transcribed verbatim and analysis was done. Seven themes were identified: vaccination perception, religion, healthcare use, parental compliance, family support, stakeholder roles, and socioeconomic factors, with improved public vaccination attitudes. Parents do not have to take their children to the hospitals for vaccination. Mass media campaigns, involvement of religious scholars and stakeholders have positively influenced the perception of community about vaccination.

Key Words: Public Health, Psychological Well-Being, Household, Depression, Multan

# Introduction

Frontline healthcare providers trained to provide Lady Health Workers (LHWs) Essential health services and instruction to their assigned regions, mainly within close Nearness to their Union Council (UC) community homes. In Punjab, the overall the estimated number of LHWs is over 48,000. Every LHW is designated to offer health care. For around 1,000 families in her designated area, she arranges conduct community meetings and conducts training. Each LHW must visit 10–15 homes per working day in order to reach these goals as specified in the plan of the government.

Official job descriptions state that LHWs are in charge of keeping whole Family planning records, eligibility married couple records, juvenile under records fifteen years, pregnant women, polio campaign data, and routine immunization information. They are also expected to keep daily records of their fieldwork, which include registers and daily logs on their healthcare initiatives. Promotes health by means of LHWs. Knowledge and enabling national health programs including the Polio to be carried out Program of Eradicative Initiative (PEI) (Aylward & Tangermann, 2011).

There is no universally accepted standard for stress assessment. Various studies employ psychological measures and biological indicators, such as heart rate variability (HRV), to assess stress levels. HRV refers to fluctuations in the

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interval between heartbeats, which tend to increase during relaxation and decrease during stress. These variations are influenced by external and internal stressors, as well as daily activities and work-related pressures (Omer, 2008).

The World Health Organization (WHO) declared the past decade as the "Decade of Vaccines," aiming to reduce child mortality through widespread immunization. Despite progress in lowering the global under-five mortality rate from 14 million to 8.6 million, Pakistan remains among the top 30 countries with high under-five mortality rates, recording 86 deaths per 1,000 live births. Additionally, the neonatal mortality rate stands at 52 per 1,000 live births, and the infant mortality rate at 72 per 1,000 live births.

To address these alarming health indicators, WHO introduced the Expanded Program of Vaccination; targeting vaccine-preventable diseases to achieve Millennium Development Goal 4 (reduce child mortality). However, the equitable distribution of immunization services remains a challenge due to factors such as lack of community awareness, limited access to healthcare facilities, and prevalent socio-economic issues. To address various health challenges, the government of Pakistan launched the Lady Health Workers (LHW) program in conservative, rural, and underserved communities (Owais et al., 2013).

Although they play a major part, the healthcare and community health needs still differ somewhat, especially at the first level of healthcare. The poor distribution of resources to primary health services have resulted in an undue emphasis on tertiary care, ignoring the necessary needs of rural people (Arooj et al., 2013).

For employees including female healthcare professionals, workplace stress is increasingly becoming a major worry. Factors like prejudice, poor chances for career advancement, and Major stressor influencing frontline well-being, stereotypes have been found. Palmer next stressed that these stressors influence not just health but also the mood Outcomes not only exacerbate current problems for female employees but also compound them. Study suggests that Women sometimes say that they are under more stress than males, therefore drawing attention to a gender difference in Stress events (Matud, 2004).

Part of the National Programme for Family, Lady Health Workers (LHWs) in Pakistan belong. Planning and primary health care (PHC) match the general group of Community Employees of Health (CHWs). Begun in 1994 and backed nationally, this effort aims to improve grassroots approach to raise public understanding of the healthcare system. Across all 135 counties of Pakistan, LHWs and their supervisors have been trained and sent out around 96,000 targeting 65% of the populace in urban ghettos and rural areas (Bhuvaneshwari, 2013; Rostami, 2024).

Supported by the World Health Organization (WHO), Pakistan's government Launched a national comprehensive community health worker program in 1994 called the National Programme of Family Planning and Primary Health Care (FP& PHC). This project, widely The Lady Health Workers Programme (LHWP) was developed to gather neighborhood participation, promote awareness, and help to develop favorable attitudes toward crucial health problems and family planning. It created a large grassroots network to efficiently handle primary issues and health care needs (Hafeez et al., 2011).

These sometimes limit interactions between women and outsiders; this makes outside medical care difficult. Suppliers reach families. According of a 2007 research in Pakistan, 66% of youngsters were only born at home, partially immunized highlights the pressing necessity for community- outreach grounded on evidence. Essential preventative and treatment health care was intended with the LHW project right to homes. Consequently, 66% of the rural people covered by this project reported great health outcome developments. A randomized control study carried out in further evidence that the intervention groups served came from 2005 in seven Pakistan sub-districts. Rates of maternal and perinatal mortality were lower in LHWs.

Furthermore, the United States Agency for International Development (USAID) conducted a poll in December 2013 showed that LHWs were essential in raising vaccination rates among low-income household youngsters. Though it had early successes, the LHW project has encountered many obstacles. 2009 survey Karachi underlined problems including limited mobility, lack of involvement, inadequate incentives. Low job satisfaction, insufficient monitoring of vaccination events, and doctors and staff all contributed to this. Low salaries, long commutes, and uneven primary

sources are medical supplies, limited career advancement, and lack of professional acknowledgement among LHWs of discontent. Strengthening the LHW given that Pakistan has a sizable rural population. Programs are vital; LHWs are instrumental in national immunization campaigns like the polio.

Supplemental Immunization Activities and Eradication Initiative. Therefore, this research Highlights how much LHWs helped to raise child immunization rates and examines the challenges impeding the program's achievement. Particularly in, the cultural and social surroundings also influence the mental health of LHWs. areas such Multan, southern Punjab. Here conventional gender expectations and societal expectations can cause for greater anxiety and stress in female health care professionals (Babbie, 2017).

Research has indicated that LHWs often face cultural limitations, restricted autonomy, and gender bias all of which can cause mental health problems including worry and sadness. Multan's long-standing Patriarchal standards exacerbate these challenges even further (Krueger, 2024). Among Community Health Workers (CHWs), including LHWs and Lady Health Supervisors (LHSs), Offer the first point of healthcare contact in underdeveloped nations. Pakistan's LHW Becoming a program covering 85% of the rural population with a workforce of more than 115,000 has become a Fundamental for the main healthcare system of the country.

Every LHW generally has at least 7-8 years of education get 15 months of training. They cater for between 100 and 150 people. Around 1,000 persons living in homes are in charge of health education, sickness prevention, immunization, family planning, maternal and child care, and specialist referral. Higher-qualified LHSs supervise and assist 20–25 LHWs each, the union council level. Reporting to district-level health officials, they make sure appropriate execution and control of health services.

Enhancing healthcare delivery is revolutionized by mobile and wireless technologies by means of Community Health Workers (CHWs). Taking advantage of the widespread mobile phone usage, particularly in low- and middle-income nations (LMICs) where mobile penetration surpasses 90% of mobile health (mHealth) solutions have become feasible means of contacting remote people. These tools enable large-scale public participation in addition to being economical. Because of their simplicity of use and availability, health campaigns. Early detection of medical problems is made possible by mobile applications, which also help to cut down on the restrictions linked. With traditional face-to-face medicine, improve efficiency by reducing delays in seeking medical attention.

They also let customers interact with health information at their own speed. Getting rid of the need to be physically near to healthcare providers. Prior studies have shown how health could help in controlling mental health problems including worry and depression. One particularly interesting case is a 2020 quasi-experimental inquiry in India, where CHWs employed a mobile app to check people using standard tools such Generalized Anxiety Disorder-7 (GAD-7) and the Patient Health Questionnaire-9 (PHQ-9). Child psychiatrists' direction sent people as necessary. The initiative resulted in Among 900 participants, notable gains in mental health results show the Task-sharing's efficacy in expanding mental health care access in underprivileged regions.

### **Research Objectives**

- 1. To explore the socio-cultural challenges faced by Lady Health Workers (LHWs) in Multan
- 2. To examine the impact of these challenges on LHWs' psychological well-being
- 3. To discover the relationship between socio-cultural challenges and job satisfaction among LHWs in Multan.

# **Research Questions**

- 1. How does the social and cultural environment influence the performance of lady health workers in Multan?
- 2. What are the primary challenges faced by LHWs in balancing their cultural expectations and professional responsibilities?
- 3. How do household responsibilities and the stress of balancing work contribute to anxiety and depression among lady health workers in Multan?



# Methodology

Methodology involves the systematic and theoretical examination of the procedures utilized in a research study. It includes the principles, frameworks, and strategies that researchers employ to gather and analyze data, ensuring that the research is trustworthy, valid, and can be replicated. Creswell (2014) emphasizes that methodology not only outlines the specific methods used but also provides the rationale for their selection, reflecting the philosophical foundations of the research. It assists researchers in aligning their objectives with the appropriate data collection and analysis techniques, whether they are quantitative, qualitative, or mixed-methods approaches. Therefore, a clearly defined methodology is essential for producing credible and objective academic work.

### **Quantitative Research Method**

The quantitative research method was employed to present data using percentages of common responses on a scale. A structured scale was used to collect quantitative data, allowing participants to self-report along a continuum of options. Quantitative research, as defined, involves the collection and analysis of numerical data to describe, predict, or control phenomena of interest. Data was gathered through a series of questions regarding demographic information, parental expectations, socioeconomic status, cultural dynamics, gender roles, and educational experiences. The study focused on the socio-cultural challenges encountered by lady health workers during child vaccination and polio campaigns in Multan city. Statistical analysis was conducted on the collected data to identify patterns and trends among different participant groups.

## Methodology of the Study

Quantitative studies include the careful gathering, processing, and interpretation of numerical data. information used to understand a particular phenomenon. Using mixed approaches for data gathering, against descriptive replies, the researcher could verify statistical results. Face-to--face interviews carried out with Pakistani subjects gathered data, therefore enabling varied sample over a brief period. The face-to-face strategy promoted more participation. rates by removing the requirement for printed and mailed paper surveys. The study questionnaire was especially designed to evaluate the socio-cultural obstacles confronted by female health personnel throughout Multan city's vaccination and polio programs. Approach used in the study to investigate the effects of socio-cultural, the study used a quantitative research design. Difficulties affecting the psychological well-being of Lady Health Workers (LHWs).

Developed in coordination with subject experts, a structured questionnaire formed the main data source. device. Closed-ended questions on the questionnaire were intended to gauge the frequency and the intensity of societal obstacles and their influence on job satisfaction, mental health, and Resilience in emotions. Random sampling was used to choose a 172 LHW sample to guarantee representativeness. Through face-to-face interviews and also using data was gathered Supervisors to expand the reach of the study. Data analysis was carried out using descriptive statistics. Using SPSS software, statistical and regression analysis helps to find patterns and links between psychological well-being and social-cultural hurdles.

### **Research Focus**

The effects of sociocultural issues on the psychological are under investigation in this study. Well-being of Lady Health Workers (LHWs). It looks into how elements including gender prejudice, societal expectations, workplace harassment, and insufficient community support influence their emotional resilience, job satisfaction, and mental health. Focusing on the lived The study aims to highlight the psychological stresses LHWs go through. challenges create within their cultural and occupational contexts.

# **Sample and Population**

The study focused on 309 Lady Health Workers (LHWs) in the Multan area. Using the Raosoft sample size calculator, sample size was calculated taking a 5% margin of A 95% confidence level, a 50% response distribution, and error define the parameters of a sample of 172. participants was chosen to guarantee statistical representativeness for the examination of the socio-cultural. difficulties encountered by LHWs and their psychological effects.

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#### **Research Tool**

The main method of data gathering in this quantitative investigation was a well-organized questionnaire. Designed to obtain information on socio-cultural difficulties experienced by The influence of Lady Health Workers on emotional resilience, job satisfaction, and mental health. Primarily based on a five-point Likert scale, closed-ended questions were used to for statistical analysis, responses should be normalized.

The questionnaire was examined by experts in order to improve the credibility and validity of the instrument. Public health and sociology. A pilot study was carried out with a small number of LHWs to pre-test The instrument guarantees the queries by guiding changes in wording, clarity, and relevance. were easily understood and contextually fitting.

# **Data Gathering Process**

The structured questionnaire, which was given to the chosen Lady Health Workers (LHWs) in the Multan area. Participants were taught about the Goals of the study and informed consent to take part freely given. Ensuring Accessibility. Respondents had plenty of time to finish the survey with the researcher Handling any questions or issues during the data gathering process. To promote honest and accurate replies, confidentiality and anonymity were preserved throughout. Once the information is gathered, coded, and prepared for statistical analysis was the procedure done for it.

### **Examination Of Data**

The answers were carefully coded and entered into the following the data gathering phase. Descriptive statistics, statistical package for the social sciences (SPSS) Summaries used frequencies, percentages, means, and standard deviations among others. Vital factors and demographic data. Regression analysis was used to evaluate how socio-cultural obstacles affect the Lady Health Workers' psychological well-being. This method helped pinpoint the character of extent of the link between independent variables including societal abuse and workplace harassment Lack of communal support, expectations, and the dependent variable psychological well-being Being. The results offered understanding on how these cultural elements affect mental health. among LHWs also and employment happiness.

The study utilized a quantitative research methodology to systematically examine the socio-cultural challenges faced by Lady Health Workers (LHWs) in Multan during child vaccination and polio campaigns. Methodology here refers not just to the specific tools and procedures used for data collection, but also to the broader theoretical and philosophical approach guiding the research. According to Creswell (2014), a sound methodology ensures the reliability, validity, and reliability of research by clearly linking objectives with appropriate data collection and analysis methods.

In this study, a quantitative approach was adopted to collect numerical data that could describe patterns and relationships through statistical analysis. A structured questionnaire, based on a five-point Likert scale, was used to gather self-reported responses from participants on topics such as gender roles, parental expectations, socioeconomic factors, and workplace dynamics. These responses were then processed using descriptive and inferential statistical methods, particularly regression analysis, via SPSS software to explore associations between socio-cultural stressors and the psychological well-being of LHWs.

To ensure a representative sample, random sampling was employed, selecting 172 participants from a population of 309 LHWs in Multan, based on the Rao soft sample size calculator with a 95% confidence level and a 5% margin of error. Data was collected through face-to-face interviews, which improved response rates and provided richer engagement compared to mailed surveys. Supervisors were also involved to help widen the study's reach. The research focus centred on how factors such as gender bias, societal expectations, workplace harassment, and inadequate community support influence the emotional resilience, mental health, and job satisfaction of LHWs. These socio-cultural challenges were seen as key contributors to stress and emotional burden, affecting both the performance and psychological state of the workers. The study sought to highlight the lived realities of LHWs, who operate at the frontline of public health delivery in culturally complex environments. A well-structured and expert-reviewed questionnaire was pre-tested in a pilot study to enhance clarity, relevance, and reliability. Questions were designed to measure the frequency and intensity of obstacles faced by the LHWs and how these impacted their mental well-being.

The data gathering process ensured ethical practices, including informed consent, confidentiality, and voluntary participation. Participants were given sufficient time to respond, and researchers addressed questions in real time to ensure comprehension and accuracy. After collection, data was coded and analysed to identify key trends. Finally, the data examination employed both descriptive statistics (percentages, means, standard deviations) and regression analysis to assess how socio-cultural variables such as societal abuse, workplace harassment, and lack of community support correlated with psychological well-being. This statistical evaluation provided insight into the extent and nature of these relationships, highlighting areas where interventions could improve LHWs' mental health and job satisfaction.

### **Data Analysis and Result**

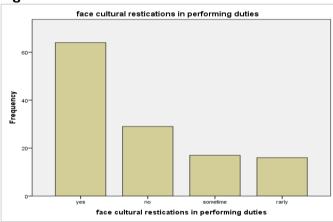
Data analysis elements of pandemics as well as society's reactions; it offers a descriptive regression analysis a Using percentages and statistical techniques, gathering, organizing, and summarizing data is achieved Charts.

 Table I

 Distribution of Respondent Regarding Face Cultural Restrictions in Performing Duties

Face cultural restrictions in performing duties	Frequency	Percentage
Yes	64	50.8
No	29	23.0
Sometime	17	13.5
Rarely	16	12.7
Total	126	100.0





The table presents data on the challenges faced by female workers due to cultural restrictions in performing their duties. Yes (50.8%), a substantial majority of respondents (50.8%) admit that cultural restrictions hinder women's ability to perform their duties efficiently. This highlights the prevalence of cultural barriers in workplaces. No (23.0%), a smaller proportion (23.0%) believes that cultural restrictions do not obstruct women workers, representative that some environments or individuals may perceive fewer cultural constraints. Sometimes (13.5%). A notable 13.5% of respondents feel that cultural restrictions occasionally hinder women, suggesting that the impact of such restrictions may vary based on circumstances or specific contexts. Really (12.7%). The 12.7% under this category could imply strong affirmation, agreement, or emphasis that cultural restrictions are a genuine issue. Alternatively, this might need clarification since "really" is a less standard response term.

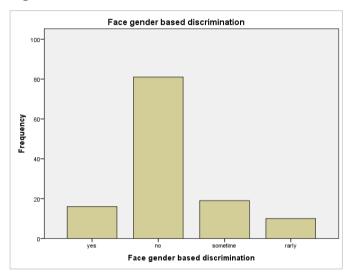
The dataset includes 126 respondents, making it a small to medium sample size for understanding perceptions about cultural restrictions. The data indicates that over half (50.8%) of the respondents agree that cultural restrictions significantly affect women workers, while only 23.0% disagree. A mutual 26.2% (sometimes + really) suggest these restrictions are situational or impactful in different passions. This highlights that workplace and societal culture continue to present barriers for women in fulfilling their professional responsibilities.

 Table 2

 Distribution of Respondent regarding to Gender-Based Discrimination

Face gender-based discrimination	Frequency	Percentage
Yes	16	12.7
No	81	64.3
Sometime	19	15.1
Rarely	10	7.9
Total	126	100.0

Figure 2



This table presents data on the perceptions of gender-based discrimination faced by Lady Health Workers (LHWs). Yes (12.7%): A smaller (12.7%) of respondents acknowledges that gender-based discrimination is a persistent issue faced by LHWs. This suggests that while some perceive the problem, it is not viewed as widespread. No (64.3%): A significant majority (64.3%) believe there is no gender-based discrimination against LHWs. This indicates that, in many cases, LHWs are perceived to work in environments where gender does not limit their opportunities or treatment.

Sometimes (15.1%): Around 15.1% of respondents feel that gender-based discrimination occurs occasionally. Rarely (7.9%): A small percentage (7.9%) believes gender-based discrimination is an infrequent issue, further supporting the notion that it is not a dominant concern in the majority of cases. The data indicates that the majority (64.3%) do not perceive gender-based discrimination as an issue for LHWs, while 12.7% see it as a persistent problem. However, when combined with "sometimes" and "rarely" (23%), it suggests that while discrimination may not be universal, it still exists to varying degrees in some contexts. This highlights the need to ensure equality in workplace practices and address isolated incidents of discrimination.

#### Conclusion

Multan's female health employees and the effects on their mental health though they sometimes experience Major socio-cultural obstacles that might negatively influence their career and mental health contentment. These difficulties comprise gender prejudices, workplace harassment, societal expectations, cultural opposition to women employees and a lack of support networks. Though healthcare delivery is increasingly emphasized, the particular socio-cultural difficulties encountered by particularly in areas like Multan, LHWs are still underused. The results of this research stress the need for focused therapies dealing with the sociocultural pressures faced by LHWs including mental health support systems, thorough training programs, Community awareness campaigns meant to lessen cultural resistance to female health practitioners.



Moreover, the research emphasizes how crucial it is to include the views of LHWs in policymaking. Formulation and program development, as their direct observations offer insightful information on the sociocultural obstacles impeding access to healthcare delivery in disadvantaged and underprivileged areas villages.

Dealing with these social- cultural issues is crucial not only for the mental health for the general efficacy of healthcare initiatives in Multan as well as for the well-being of LHWs similar socio-cultural environments. Future investigations should investigate how socio-cultural obstacles affect LHWs in other regions. Including comparative studies to spot local problems and successful coping strategies Approaches. Longitudinal studies could also give more thorough understanding of how extended Exposure to socio-cultural stressors worsens the psychological well-being of LHWs, therefore helps to more thorough knowledge of this important topic.

#### Recommendations

- 1. Frequently, these problems exacerbate one other, thereby presenting more obstacles in reaching defined aims.
- 2. Both unavoidable and avoidable yet manageable causes, including wars and natural catastrophes
- 3. Have also become major obstacles that hold back projects meant to improve. Dealing with the obstacles mentioned above calls for creative approaches and realistic recommendations to improve the performance of current campaigns and systems.
- 4. Enhancing the internal coherence and capability of the CBHC (Community-Based) is crucial. Section inside the Ministry of Public Health (MoPH) to improve cooperation: Health Care) between the Steering Committee for the CBHC and the Polio Eradication Initiative (PEI).
- 5. Selecting a woman national officer at a senior technological level is essential for linking the Internal CBHC organizational void this role will help guarantee that Community currently exists.

#### References

- Arooj, S., Ali, S., Baber, N., Abbasi, A., & Ali, M. (2013). Socioeconomic factors effecting polio vaccination in Pakistan. *Health*, *05*(05), 892–897. https://doi.org/10.4236/health.2013.55117
- Aylward, B., & Tangermann, R. (2011). The global polio eradication initiative: lessons learned and prospects for success. *Vaccine*, *29 Suppl 4*, D80-5. https://doi.org/10.1016/j.vaccine.2011.10.005
- Babbie, E. R. (2017). The practice of social research. Cengage Learning.
- Bhuvaneshwari, M. (2013). A case study on psychological and physical stress undergone by married working women. *IOSR Journal of Business and Management*, 14(16), 38-44.
- Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches. Sage Publications.
- Hafeez, A., Mohamud, B. K., Shiekh, M. R., Shah, S. I., Jooma, R. (2011). Lady health workers programme in Pakistan: Challenges, achievements and the way forward. *JPMA. The Journal of the Pakistan Medical Association, 61*(3), 210-215. https://ecommons.aku.edu/pakistan fhs mc surg neurosurg/248
- Krueger, S., Ebner, C., & Rohrbach-Schmidt, D. (2024). Gender composition and the symbolic value of occupations: new evidence of a u-shaped relationship between gender and occupational prestige based on German microdata. *Work, Employment and Society, 38*(1), 242–261. https://doi.org/10.1177/09500170221117415
- Matud, M. P. (2004). Gender differences in stress and coping styles. *Personality and Individual Differences*, 37(7), 1401–1415. https://doi.org/10.1016/j.paid.2004.01.010
- Omer, S., & Jabeen, S. (2022). The Issues and Challenges Faced by Lady Health Workers in Maternal Health Care in Rural Communities: An Evidence from South Punjab. *Pakistan Journal of Gender Studies, 22*(2), 139–152. https://doi.org/10.46568/pigs.v22i2.620
- Owais, A., Khowaja, A. R., Ali, S. A., & Zaidi, A. K. M. (2013). Pakistan's expanded programme on immunization: an overview in the context of polio eradication and strategies for improving coverage. *Vaccine*, 31(33), 3313–3319. https://doi.org/10.1016/j.vaccine.2013.05.015
- Rostami, F. (2024). A New Urban Methodology for Iranian Urban Studies. In *Inside Outside: The Hidden Voices of Historic-Old-New Yazd* (pp. 1–24). Cham: Springer Nature Switzerland.

