

## ASSOCIATION BETWEEN MATERNAL INTRAPERSONAL FACTORS AND CHILD HEALTH CARE SERVICES OF LADY HEALTH WORKERS IN PAKISTAN

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### ABSTRACT

*The underprivileged generally have less access to healthcare but one method to assist those in need is to provide health care through Community Health Workers (CHWs), which are basically trained to provide health services to their fellow community members and they are named as Lady Health Workers (LHWs) in Pakistan. The objective of the current study was to understand the relationship between maternal intrapersonal characteristics and using LHWs' health care services for their children. The social ecology model served as the study's theoretical framework in this quantitative research. Data were collected using an interview schedule, and using a probability sampling technique, 398 females were selected as a sample from among the LHW-served homes in the Lahore District, while participants were selected by a proportional systematic random sample. Mothers of children who have utilized LHW services participated as the study's respondents. The majority of respondents, who were housewives and had some formal education, were highly aware of the services provided by LHWs, according to the study's findings. Furthermore, because LHWs offers services at clients' doorsteps, the majority of respondents used their services for their children. Based on study findings, it is concluded that LHW services should be recognized for providing health care for children in order to lower infant mortality and ensure children have a healthy growth.*

**Key words:** Community Health Workers, Child Health Care, Lady Health Workers, Factors, Intrapersonal.

### INTRODUCTION

The primary objective in global health is universal health coverage, which is widely supported, however there are many obstacles that prevent children in low- and middle-income countries (LMIC) from obtaining necessary medical care. In fact child mortality in these contexts is significantly influenced by lack of access to healthcare. Furthermore, accessibility issues have been extensively researched, but there is little information available on effective interventions that might expand access to services for kids (Bright et al., 2017). A person from the community who has obtained training to promote health or provide some healthcare services—but who is not a healthcare professional—is referred to as a lay health worker (Lewin et al., 2010). Case management of pediatric illnesses (such as pneumonia, malaria, and newborn sepsis) as well as the provision of preventative measures like immunization, the promotion of healthy behavior, and community mobilization are among the many activities that community health workers can carry out, furthermore, numerous studies demonstrate significant drops in child mortality, particularly when sick children are managed by these kinds of community initiatives, while in order to document the influence on child survival, determine cost effectiveness, and identify success and sustainability-related aspects, assessment is required before introducing large-scale initiatives for community health workers (Haines et al., 2007). Growing emphasis is being paid to the potential contribution that Community Health Workers

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(CHWs) may make to improving mother and child health outcomes, particularly in low- and middle-income countries and in disadvantaged areas (Melo e Lima et al., 2018).

CHWs have taken part in a global initiative to improve the provision of primary healthcare in low-income areas, and CHW initiatives have been adjusted as a result, furthermore CHWs are increasingly viewed as a trained and paid cadre that offers advice and treatments as well as implements preventative measures (Singh & Sachs, 2013). Three training and support products are included in a package created by WHO and UNICEF to train CHWs for caring Newborns and Children in the Community i.e. firstly the CHW visits women in their homes five times: twice while they are pregnant, once on the day of delivery if the mother gave birth at home, and once shortly after she has left the hospital, secondly the CHW provides advice to families on methods they may use at home for newborn feeding, play and communication for child development, recognizing and handling children illnesses, and sickness prevention, thirdly the CHW evaluates, classifies, and treats children with pneumonia, diarrhea, and/or malaria who are between the ages of two and five, as well as checks for malnutrition (Aboubaker et al., 2014). Community health workers (CHWs) have the capacity to improve access to care, particularly in rural regions, and so lower the death rate of children (Wanduru et al., 2016). A particularly promising approach to achieving universal health coverage and putting a stop to unnecessary mother and child mortality by 2030 is scaling up CHW programs to boost population-level coverage of life-saving measures (Chou et al., 2017).

For many low-resource nations, a lack of qualified healthcare professionals is a significant barrier to lowering maternal, newborn and under-five mortality thus Community health workers (CHWs) are effective at providing primary healthcare services, according to the evidence, but transferring tasks from providers with advanced training to this cadre has generally been done with caution—both due to the difficulty of determining an appropriate package of CHW services and to prevent exceeding the capacity of the cadre (Haver et al., 2015). In order to be informed about births, identify unwell infants, and start the proper, safe, and timely treatment, CHWs can collaborate with people of their community (Khanal et al., 2011). One of the key components of health systems that can promote coverage of community-based newborn health care initiatives and adherence to vital newborn care practices at the home level is the expertise of CHWs (Agrawal et al., 2012). It is evident that the use of trained CHW home visits improved outcomes for unwell neonates and young infants in communities with inadequate resources (Tripathi et al., 2016). Community health workers (CHWs) have a solid reputation for acting as change agents to encourage residents of their communities to adopt healthier lifestyles. However, their expertise and counseling abilities are crucial in the successful promotion of the best feeding practices for infants and young children (Kohli & Chadha, 2017).

In Pakistan Community Health Workers called as Lady Health Workers (LHWs) and the building of this highly strategically located cadre connect first level care institutions to the community to improve the provision of primary healthcare services. Each LHW provides services to 1,000 residents of the community and expands her reach to the catchment population through regular home visits, while over 20 tasks including every area of maternal, infant, and child care are included in the work scope Thus, in the regions that the LHWs serve, the health indicators are far better than the national average (Hafeez et al., 2011). The community's high level of acceptance of LHWs and its respectful attitude towards them are motivating factors for service users seeking LHW services (ud Din, & Jabeen., 2023).

## **REVIEW OF LITERATURE**

In order to improve access to health services for children in LMIC under the age of five, Bright et al (2017) did a systematic review on the efficacy of interventions in this area. In January 2016, four databases (EMBASE, Global Health, MEDLINE, and PSYCINFO) were searched. Studies were included if they examined strategies for boosting use of medical services, vaccination rates, adherence to prescriptions, or referrals. This review filled a gap in the research by demonstrating the variety and efficacy of interventions that can be utilized to improve access for kids under the age of five in LMIC. The study identified several intervention areas, such as text message reminders and service delivery at or near the client's home, that appear to exhibit favorable trends.

Lewin et al (2010) conducted data based research to evaluate the impact of Lay Health Workers (LHW) interventions on mother and child health, as well as the control of infectious illnesses, in primary and community health care. The study found that when compared to standard healthcare services, the use of lay health workers: Probably increases the number of mothers who initiate breastfeeding, continue breastfeeding, and exclusively give their kid breast milk. Furthermore, most likely causes a rise in the number of kids who have their immunizations up to date; may result in slightly fewer kids developing fever, diarrhea, and pneumonia; may result in fewer fatalities of children under five; it may also result in more parents seeking medical attention for their sick child.

In rural India, health care providers in communities are known as Accredited Social Health Activists (ASHAs). A study by Wagner et al (2018) calculates the percentage of villages having an ASHA and looked at how changes in healthcare are affected by increasing ASHA placement. From the District-Level Household Surveys conducted in 2007–2008 and 2012–2013, information regarding ASHA placement and maternal and child healthcare was gathered. In this ecological study, the variation in ASHA placement between the years was regressed over the variation in district-level proportions of maternal and child healthcare outcomes between 2012–13 and 2007–08. The study found that by serving as a conduit to healthcare services and trying to lessen the enormous gaps in maternal and child health that still exist between rural and urban regions in contemporary India, an ASHA may deliver crucial services to her community in a culturally sensitive manner while having little training.

The mortality of children under the age of five is one of the most serious public health problems in underdeveloped countries. One of the most effective ways to enhance children's health in rural areas is through the promotion of family and community health practices by community health workers (CHWs). A study was carried out by Perez et al (2009) with the objective to evaluate CHWs' contributions to the expansion of essential child health services in rural Mali. Using multi-stage cluster sampling of wards and villages, a community-based cross-sectional survey was conducted, while 401 child carers were given questionnaires to complete, and 72 CHWs had their records checked. Analysis of homes with and without CHW visits revealed that CHWs had a favorable impact on family health practices, including knowledge of how to manage a child's fever, the avoidance of using antibiotics at home to treat diarrhea, and the existence and usage of bed nets.

In India, a study by Nadella et al (2021) sought to examine the effects of several types of CHWs on a wide variety of prenatal and newborn health outcomes. The data was examined from women questioned in India's most recent National Family Health Survey-4 (NFHS-4) population-based cross-sectional survey, which was conducted in 2015–2016. Study found that receiving antenatal care (ANC) from CHWs is linked to better ANC use, ANC quality, early breastfeeding initiation, and the primary result of decreased infant mortality.

A study was conducted by Gogia and Sachdev (2010) to ascertain if community health workers' home visits for newborn care can decrease infant and neonatal mortality and stillbirths in resource-constrained areas. Up to 2008, a thorough assessment of controlled trials evaluating various intervention packages, including community health workers' home visits for newborn care, was performed. A meta-analysis was done to ascertain the pooled risk of outcomes. According to the findings of the study home visits by CHWs for prenatal and newborn care, together with community mobilization initiatives, are linked to decreased neonatal death and stillbirths in southern Asian contexts with high neonatal mortality and limited access to facility-based health care.

An estimated 2 to 3 million fatalities are prevented annually due to immunization, a potent and affordable health intervention. Kenya has high death and morbidity rates for infants and children under five, while one strategy for lowering child morbidity and death rates in Kenya is to increase regular child immunization coverage. Nzioki et al (2017) carried out a research with the objective to determine the impact of CHWs on baby immunization coverage in Kenya. The study found that in the intervention site, CHWs raised immunization coverage to an ideal level (98.8%). It was also concluded on the basis of study findings that Kenya needs to accelerate the CHWs intervention's widespread adoption in order to enhance child health outcomes through increased immunization rates.

In five western Kenyan areas where community case management was being practiced, a research was carried out by Owek et al (2017). In-depth interviews and focus groups with mothers of children under five and important stakeholders were held as part of this qualitative cross-sectional study. According to study findings the positive perceptions of respondents included, among other things, acknowledging and appreciating the services of CHWs, bringing health services close to the community, avoiding long lines at the health facilities, offering health education that promotes healthy practices, and promoting positive health-seeking behavior from within the communities.

According to Yousafzai et al (2014) more than 200 million young children globally who are not reaching their developmental potential might possibly benefit from stimulation and nutrition provided through health services on a big scale. In a study by Yousafzai et al (2014), the integration of treatments to improve child development and growth outcomes in the Lady Health Worker (LHW) project in Sindh, Pakistan, was examined for its viability and efficacy. The study undertook a community-based cluster-randomized efficacy trial. 80 clusters of kids from LHW catchments were randomly assigned to receive normal health and nutrition services, nutrition education and multiple micronutrient powders, responsive stimulation, or a combination of both enrichment interventions. The study discovered that LHWs can successfully offer the responsive stimulation intervention and have a beneficial impact on children's developmental results.

A study was conducted by Shahid et al (2022) in Pakistan, which investigated that how the nutritional condition of children under the age of five is affected by both the frequency of Lady Health Worker (LHW) visits in the community and the distance to a healthcare institution. Additionally, it investigated how the public feels and thinks about LHWs' performance. With the use of a purposive random sampling approach, data on several characteristics, including children's height, age, weight, and socioeconomic status, were collected from 384 rural homes in a marginalized region of Punjab province. The findings show that homes with frequent LHW visits within 15 days had a decreased likelihood of having children who are malnourished. A favorable attitude towards LHWs is also demonstrated by the respondents. When it comes to check-ups and safe delivery, they have placed top priority to their performance that benefits moms and children.

## **METHODOLOGY**

A cross-sectional research of Lady Health Workers' clients served as the foundation for this study, which used a quantitative method to collect data. The district of Lahore served as the study's geographical universe, and the respondents were mothers who had used LHWs' child health care services for their children. A probability sampling technique that employed proportional systematic random selection to choose a sample of 398 females was used to sample the LHW-served homes. Data collection was carried out using an interview schedule as a tool, and SPSS was utilized to process it. The objective of the study was to understand various services of LHWs utilized by females and the factors at various levels that impacted their use of those services, while this article is specifically related to intrapersonal factors of mothers which are associated with the use of child health care services of LHWs availed by them for their children.

## **RESULTS**

According to the results Table 1 shows that there is significant association between intrapersonal factors of respondents and LHWs' diagnosis of child illness service availed by respondents.

**Table 1**

*Association between Intrapersonal Factors and LHWs' Diagnosis of Child Illness Service Availed by Respondents*

Responses	N=398			Pearson Chi Square	df	P-Value
	Diagnosis of child illness					
	Fair	Good	Excellent			
Age						

15-19	1	3	4			
20-24	6	12	90			
25-29	5	22	121			
30-34	6	11	78	10.857	10	0.039
35-39	4	5	25			
40-44	0	1	2			
45-49	0	1	1			
<b>Qualification</b>						
No education	7	11	49			
Elementary	4	13	56			
Secondary	4	20	82	15.297	10	0.022
Intermediate	5	4	64			
Graduation	1	4	46			
Post-graduation	1	3	24			
<b>Occupation</b>						
Housewife	19	50	291			
Govt. employee	1	3	16	23.075	6	0.009
Private job	2	1	11			
Business	0	1	3			
<b>Observe Veil</b>						
No	17	37	256	34.257	2	0.019
Yes	5	18	65			
<b>Knowledge about LHWs program</b>						
Mother and child health care	19	52	305	42.952	2	0.029
Family planning services	3	3	16			
<b>Knowledge regarding LHWs</b>						
Reproductive and primary health care provider	17	50	284	43.782	4	0.045
Government employee	3	4	21			
Link between clients and health facility	2	1	16			
<b>Perspective regarding important role of LHWs</b>						
To provide health related information	21	52	302	20.084	2	0.009
To provide medicine	1	3	19			
<b>Duration of availing services of LHWs</b>						
Less than one year	0	1	3			
1 - 5 years	0	2	28	13.958	6	0.030
5 - 10 years	22	40	258			
More than 10 years	0	12	32			
<b>Source of information regarding LHWs</b>						

Through LHWs visit	14	51	293			
Through some family member/friend	5	2	21	19.561	4	0.001
Through some health facility	3	2	7			
<b>Main reason to avail LHWs services</b>						
Serve at door step	13	27	185			
She is a woman	1	1	8			
She is trustworthy	6	25	116	19.923	8	0.011
She is from our own community	1	2	12			
Family member recommended	1	0	0			

Table 2 shows that there is significant association between intrapersonal factors of respondents and LHWs' advice on child illness service availed by respondents.

**Table 2**

*Association between Intrapersonal Factors and LHWs' Advice on Child Illness Service Availed by Respondents*

Responses	N=398				Pearson Chi Square	df	P- Value
	Advice on child illness						
	Fair	Good	Excellent	Does not apply			
<b>Age</b>							
15-19	0	2	6	0			
20-24	1	17	84	6			
25-29	3	18	122	5			
30-34	5	10	76	4	29.87	15	0.028
35-39	1	4	29	0			
40-44	0	1	2	0			
45-49	0	1	1	0			
<b>Qualification</b>							
No education	1	9	52	5			
Elementary	2	7	59	5			
Secondary	3	13	89	1	15.442	15	0.042
Intermediate	1	8	62	2			
Graduation	1	11	38	1			
Post-graduation	2	5	20	1			
<b>Occupation</b>							
Housewife	8	46	292	14			
Govt. employee	1	2	17	0	9.214	9	0.018
Private job	1	3	9	1			
Business	0	2	2	0			
<b>Observe veil</b>							
No	9	38	252	11	42.35	3	0.003

Yes	1	15	68	4			
<b>Knowledge about LHWs program</b>							
Mother and child health care	10	49	302	15	51.883	3	0.007
Family planning services	0	4	18	0			
<b>Knowledge regarding LHWs</b>							
Reproductive and primary health care provider	10	45	281	15			
Government employee	0	4	24	0	14.395	6	0.023
Link between clients and health facility	0	4	15	0			
<b>Perspective regarding important role of LHWs</b>							
To provide health related information	10	44	306	15	14.907	3	0.002
To provide medicine	0	9	14	0			
<b>Duration of availing services of LHWs</b>							
Less than one year	1	2	1	0			
1 - 5 years	1	5	24	0	44.499	9	0.000
5 - 10 years	6	42	265	7			
More than 10 years	2	4	30	8			
<b>Source of information regarding LHWs</b>							
Through LHWs visit	8	50	285	15			
Through some family member/friend	2	1	25	0	17.004	6	0.032
Through some health facility	0	2	10	0			
<b>Main reason to avail LHWs services</b>							
Serve at door step	8	38	168	11			
She is a woman	0	0	10	0			
She is trustworthy	2	13	128	4	19.726	12	0.022
She is from our own community	0	1	14	0			
Family member recommended	0	1	0	0			

## DISCUSSION

According to the current study Community Health Workers (CHWs) known as Lady Health Workers (LHWs) in Pakistan playing an important role in the diagnosis and treatment of child illness and mothers of children are of the views that they had an excellent experience in this regard. In addition, the study discovered that mothers' intrapersonal factors, such as their knowledge of LHW program and services, are strongly linked to their decision to use those services. Information about those services was primarily obtained through home visits by Lady Health Workers, and the primary motivation for using those services for child health care was that LHWs came to people's doorsteps. According to the study's findings, the majority of respondents were housewives who had been using LHWs for child health care services for the previous 5 to 10 years. This is because the mothers were well aware of the services offered by LHWs and believed that having services provided at their homes made LHWs services preferable. These findings are in line with the study of Lewin et al (2010) which found that the employment of lay health workers: Probably increases the proportion of mothers who start, continue, and only feed their child breast milk.

Additionally, it most likely results in a rise in the proportion of children who are immunized to date; may cause a marginal decrease in the number of children who contract fever, diarrhea, and pneumonia; may cause a decrease in the number of under-five fatalities; and may also cause an increase in the number of parents who seek medical attention for their sick child.

Another study by Wagner et al (2018) also found the similar findings that a Community Health Worker known as Accredited Social Health Activists (ASHAs) can provide vital services to her community while having little training by acting as a conduit to healthcare services and working to reduce the enormous maternal and child health gaps that still exist between rural and urban areas in modern India. The current study' findings are also in accordance with a study by Perez et al (2009) which discovered that CHWs had a positive influence on family health practices, including awareness of bed nets and their use, knowledge of how to treat a child's fever, and aversion to taking antibiotics at home to treat diarrhea. Furthermore, Nadella et al (2021) found the efficacy of CHWs like the current study that obtaining prenatal care (ANC) from CHWs is associated with improved ANC usage, ANC quality, early breastfeeding initiation, and a reduction in infant mortality as the main outcome. The current study's findings are also in line with the study of Gogia and Sachdev (2010) which revealed that community mobilization programs and CHW home visits for pregnancy and newborn care are related to a reduction in neonatal deaths and stillbirths. Another study by Nzioki et al (2017) came to the conclusion that immunization coverage of children was increased by CHWs to an optimal level (98.8%) like the current study findings that LHWs are excellent in the provision of child health care services, while a study from Pakistan by Yousafzai et al (2014) also found that LHWs had a positive effect on children developmental outcomes.

## **CONCLUSION**

People, especially children, in poor nations do not have access to, or have limited access to, health care, which leads to a high prevalence of sickness and child mortality. The use of Community Health Workers/Lady Health Workers (LHWs) at the local level to deliver healthcare services at people's doorsteps allows them to access healthcare without having to pay for transportation to healthcare facilities and provides prompt assistance when needed. According to the results of the current study, mothers of young children found that LHW services were highly helpful for their children's diagnosis and treatment as LHWs visiting clients' homes was the main reason for using this type of service for child health care.

## **RECOMMENDATIONS**

- It is recommended to raise public knowledge of LHW services especially among mothers of young children so that the greatest possible number of individuals may take use of them to reduce disease and death rate of children.
- It is also recommended that LHWs should be provided with logistical support and periodic refresher trainings to monitor children's healthy growth to decrease the risk of sickness in children.

## **REFERENCES**

- Aboubaker, S., Qazi, S., Wolfheim, C., Oyegoke, A., & Bahl, R. (2014). Community health workers: A crucial role in newborn health care and survival. *Journal of global health, 4*(2).
- Agrawal, P. K., Agrawal, S., Ahmed, S., Darmstadt, G. L., Williams, E. K., Rosen, H. E., ... & Baqui, A. H. (2012). Effect of knowledge of community health workers on essential newborn health care: a study from rural India. *Health policy and planning, 27*(2), 115-126.
- Bright, T., Felix, L., Kuper, H., & Polack, S. (2017). A systematic review of strategies to increase access to health services among children in low and middle income countries. *BMC health services research, 17*, 1-19.
- Chou, V. B., Friberg, I. K., Christian, M., Walker, N., & Perry, H. B. (2017). Expanding the population coverage of evidence-based interventions with community health workers to save the lives of mothers and children: an analysis of potential global impact using the Lives Saved Tool (LiST). *Journal of global health, 7*(2).



- Gogia, S., & Sachdev, H. S. (2010). Home visits by community health workers to prevent neonatal deaths in developing countries: a systematic review. *Bulletin of the World Health Organization*, 88, 658-666.
- Hafeez, A., Mohamud, B. K., Shiekh, M. R., Shah, S. A. 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.
- Haines, A., Sanders, D., Lehmann, U., Rowe, A. K., Lawn, J. E., Jan, S., ... & Bhutta, Z. (2007). Achieving child survival goals: potential contribution of community health workers. *The lancet*, 369(9579), 2121-2131.
- Haver, J., Brieger, W., Zoungrana, J., Ansari, N., & Kagoma, J. (2015). Experiences engaging community health workers to provide maternal and newborn health services: implementation of four programs. *International Journal of Gynecology & Obstetrics*, 130, S32-S39.
- Khanal, S., Sharma, J., Gc, V. S., Dawson, P., Houston, R., Khadka, N., & Yengden, B. (2011). Community health workers can identify and manage possible infections in neonates and young infants: MINI—a model from Nepal. *Journal of health, population, and nutrition*, 29(3), 255.
- Kohli, S., & Chadha, R. (2017). Knowledge and Counselling skills of community health Workers for Promotion of optimal infant and young child feeding (IYCF) practices: a review. *Int J Health Sci Res*, 7(10), 240-51.
- Lewin, S., Munabi-Babigumira, S., Glenton, C., Daniels, K., Bosch-Capblanch, X., Van Wyk, B. E., ... & Scheel, I. B. (2010). Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases. *Cochrane database of systematic reviews*, (3).
- Melo e Lima, T. R. D., Maia, P. F. C. D. M. D., Valente, E. P., Vezzini, F., & Tamburlini, G. (2018). Effectiveness of an action-oriented educational intervention in ensuring long term improvement of knowledge, attitudes and practices of community health workers in maternal and infant health: a randomized controlled study. *BMC Medical Education*, 18(1), 1-13.
- Nadella, P., Subramanian, S. V., & Roman-Urrestarazu, A. (2021). The impact of community health workers on antenatal and infant health in India: A cross-sectional study. *SSM-Population Health*, 15, 100872.
- Nzioki, J. M., Ouma, J., Ombaka, J. H., & Onyango, R. O. (2017). Community health worker interventions are key to optimal infant immunization coverage, evidence from a pretest-posttest experiment in Mwingi, Kenya. *Pan African Medical Journal*, 28(1).
- Owek, C. J., Oluoch, E., Wachira, J., Estambale, B., & Afrane, Y. A. (2017). Community perceptions and attitudes on malaria case management and the role of community health workers. *Malaria journal*, 16, 1-9.
- Perez, F., Ba, H., Dastagire, S. G., & Altmann, M. (2009). The role of community health workers in improving child health programmes in Mali. *BMC international health and human rights*, 9, 1-12.
- Shahid, M., Ameer, W., Malik, N. I., Alam, M. B., Ahmed, F., Qureshi, M. G., ... & Zia, S. (2022). Distance to Healthcare Facility and Lady Health Workers' Visits Reduce Malnutrition in under Five Children: A Case Study of a Disadvantaged Rural District in Pakistan. *International Journal of Environmental Research and Public Health*, 19(13), 8200.
- Singh, P., & Sachs, J. D. (2013). 1 million community health workers in sub-Saharan Africa by 2015. *The Lancet*, 382(9889), 363-365.
- Tripathi, A., Kabra, S. K., Sachdev, H. P. S., & Lodha, R. (2016). Home visits by community health workers to improve identification of serious illness and care seeking in newborns and young infants from low-and middle-income countries. *Journal of Perinatology*, 36(1), S74-S82.
- ud Din, N. S., & Jabeen, T. (2023). Community Factors Facilitating or Hampering Service Delivery of Lady Health Workers: Views and Experiences of Beneficiaries. *Pakistan Journal of Applied Social Sciences*, 14(1), 1-16.

- Wagner, A. L., Porth, J. M., Bettampadi, D., & Boulton, M. L. (2018). Have community health workers increased the delivery of maternal and child healthcare in India?. *Journal of Public Health, 40*(2), e164-e170.
- Wanduru, P., Tetui, M., Tuhebwe, D., Ediau, M., Okuga, M., Nalwadda, C., ... & Rutebemberwa, E. (2016). The performance of community health workers in the management of multiple childhood infectious diseases in Lira, northern Uganda—a mixed methods cross-sectional study. *Global health action, 9*(1), 33194.
- Yousafzai, A. K., Rasheed, M. A., Rizvi, A., Armstrong, R., & Bhutta, Z. A. (2014). Effect of integrated responsive stimulation and nutrition interventions in the Lady Health Worker programme in Pakistan on child development, growth, and health outcomes: a cluster-randomised factorial effectiveness trial. *The Lancet, 384*(9950), 1282-1293.