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**ANALYZING THE IMPACT OF LADY HEALTH WORKER PROGRAM ON  
UTILIZATION OF MATERNAL HEALTH SERVICES IN SINDH**

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**ABSTRACT**

*The study aims to analyze impact of Lady Health Worker program on use of maternal health services in communities where lady health workers are providing services at doorsteps. The study's main focus was the rural districts of Sindh. The maternal health service is determined by at least four Antenatal care (ANC) visits provided to mother and receipt of at least two Tetanus Toxoid (TT) injections to mother during pregnancy by a Lady Health Worker (LHW). Thus effective maternal health service provision has direct impact on reducing maternal and infant mortality rate. For analysis purpose three years (2017-2019) secondary data pertaining to all districts of Sindh was collected from the Sindh Lady Health Worker program head office Hyderabad. Also secondary data of Pakistan Demographic and Health Survey (2017-18) was used to see the impact of intervention of LHW program on maternal health. The LHW program was implemented by Ministry of Health, Government of Pakistan in 1994 and then devolved to provinces after implementation of the 18<sup>th</sup> Constitutional Amendment in 2010. The study revealed that the services provided by the lady health workers in communities in these districts has positively influenced the uptake of maternal health services as determined by the dependent variables like antenatal visits by pregnant mothers to nearest health facilities and receipt of Tetanus Toxoid injection during pregnancy.*

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**Keywords:** Lady Health Worker program, Maternal Health Service, Antenatal Care, Tetanus Toxoid, Maternal Mortality Rate, Infant Mortality Rate.

**INTRODUCTION**

Pakistan is currently facing significant economic and governance issues, further being a lower-middle income country is still striving hard to achieve economic sustainability. General economic

indicators are also not satisfactory. It has witnessed increase in debt burden with a fiscal deficit of 8% of the GDP. The growth rate of country though recovered to 3.4% but not at par with peer and neighboring countries, rather far behind. The Human Development Index ranks Pakistan at number 146 out of 187 countries and 22.3% of its population is living below the poverty line. The gender inequality in sectors like education, health, environment and developmental sectors has been seen with female workforce participation ratio of 22.7% as compared to 83.3% for male. Only 18.3% of women have a secondary or higher education (Rifat Atun, Nina Zhu & Elizabeth Allen, 2014).

Pakistan's maternal and child healthcare data is upsetting too. *Demographic and Health Survey Pakistan, 2017-18* depicts infant mortality rate (IMR) of 74 per 1000 live births. In rural areas the low contraceptive prevalence rate (CPR) of 25% and high fertility rate of 3.6 children per woman has hindered achievement of Sustainable Development Goals (SDGs). Thus improvement in health of mothers and children in Pakistan is of prime importance as witnessed by most of the developing countries. *Pakistan Economic Survey 2017-18* depicts maternal mortality ratio (MMR) of 178 per 100,000 which has reduced from 286 in 2006-07. If maternal healthcare services are utilized effectively it can help in reducing MMR and IMR in rural areas where mostly these services are under utilized by the target population (Amin, 2010).

To improve utilization of maternal health and family planning services and make them easily accessible to poor people, Government of Pakistan (GoP) initiated the Lady Health Worker (LHW) Program in 1994. Main objectives of the LHW program were to improve uptake of Maternal and Child Health (MCH) services in rural-slum / rural communities and promote adoption of family planning methods and distribution of effective contraceptives. It has been a big Community Based Initiative program in Pakistan which linked communities / beneficiaries with health facilities throughout the country. Approximately, 110,000 Lady Health Workers (LHWs) were recruited throughout country including 23,185 LHWs for Sindh Province (MoH, 2011).

The program was devolved to province after enactment of 18<sup>th</sup> Constitutional Amendment in 2010. The purpose was to promote awareness and community participation and to provide

preventive, curative and rehabilitative services to the target population like female mothers and children with focus on family planning and primary healthcare. The program also envisaged enhancement in immunization of children ageing 12-23 months and ensuring their complete vaccination. It focused on provision of Maternal & Child Healthcare (MCH) by taking steps to reduce Infant Mortality Rate (IMR) from 85 to 55/1000 Live Births (LBs) and reduction in Maternal Mortality Rate (MMR) from 400 to 180/100,000 Live Births. It also focused on improving food and nutritional requirements for mothers & children (GoS, 2018).

Each LHW is attached with a government health facility like rural health centre (RHC) or a basic health unit (BHU) in community, where she receives training, stipend and medical supplies. They register population in their community area and target groups including pregnant mothers. Each LHW is responsible for approximately 1,000 people within a catchment area of 200 houses. They work directly out from their homes, which are commonly called “health hubs” and are selected from that rural community and trained to provide healthcare services to that community. The LHW must have recommendation from the community, has middle/matric school education, a local resident, preferably married, and at least eighteen years of age. The LHWs visit households to create awareness on reproductive health, nutrition, facilitate registration of births and deaths, distribution of medicines for family planning and assist in immunizing children as per national schedule. LHWs advise pregnant clients to seek ANC services in the public sector health facilities, even though care in the private sector is considered to be of higher quality. LHWs coordinate with traditional birth attendants and midwives to ensure that mothers receive adequate healthcare. For complicated conditions, LHWs are trained to refer patients to nearby hospitals or clinics (Ministry of Health Pakistan, 2011).

#### **LITERATURE REVIEW**

The studies show that Pakistan has the highest maternal mortality ratios (MMR) in South Asia at 178 per 100,000 live births. The infant mortality rate is 74 deaths per 1,000 live births, which is even higher in rural areas. The antenatal visits by pregnant mothers in fourth month of pregnancy were 33% only and about 35% mothers received

no prenatal care as reported by *WHO Pakistan Demographic and Health Survey (PDHS) 2018 (WHO, 2018)*. About 7.6 million children under five died annually in the world. Common reason highlighted was lack of awareness of target women. Skilled Birth Attendants (SBAs) assisted only 39% of births, with significant disparities by rural-rural residence. About 34% of births took place in a health facility and 66% were home deliveries and among the home based deliveries only 7.6% were assisted by a skilled birth attendant (NIPS, 2008). Significant improvement has been seen by LHWP intervention, the data obtained from the program office Sindh depicts remarkable reduction in MMR due to healthcare provision by SBAs. Moreover, country is striving hard to achieve the United Nation Sustainable Development Goals (SDGs) by 2030.

The maternal deaths can only be prevented by right decision- making to get proper medical advice (if birth complications are noticed), utilizing services of skilled birth attendant during labor and ensuring availability of emergency care & referral to quality healthcare facility (Campbell & Graham, 2016). The antenatal care (ANC) in ante-partum period prevents complications by proper management and saves life of mother and child (Amin, Shah and Becker, 2010). The conduct of routine ANC helps client in birth preparedness, identify complications and prevent complicated pregnancies, particularly in rural areas where education level is low. ANC has been found to be important determinant of safe delivery and is positively related with uptake of postnatal healthcare services thus ensures reduction in maternal mortality (Andersen and Newman, 2007). ANC visits provide mothers with opportunities to obtain preventative health services like immunizations against neonatal tetanus, prevention of malaria, HIV counseling and lab testing such as blood and urine tests (WHO & UNICEF, 2003). The immunization of pregnant women against tetanus is one of the effective methods of reducing neonatal tetanus mortality rates and occurrence of maternal tetanus. In 2008, about 59,000 newborns died worldwide due to neonatal tetanus and the cases reported alone in Pakistan numbered 508 (Arif and Farooq, 2011). In Pakistan, over 65% of the population live in rural areas, where there is absence of community health worker, lack of infrastructure, poor road

conditions, absence of transport, and hilly and desert terrains which reduce women's access to services (NIPS, 2008).

Pakistan's public health sector has a three-tiered service delivery system composed of primary, secondary and tertiary care. Presently there are approximately 13,051 primary care facilities and 965 tertiary and secondary hospitals. The population-to-health facility ratios has shown decline from 28,971:1 to 12,357:1, number of trained health workers has remained low with just 1.4 nurses, midwives, and doctors per 1,000 people compared to an estimated 2.28 required for population's basic needs. There are limited career advancement opportunities for health workforce, lack of human resources, poor working environment and inequitable resource allocation in public health sector. Thus, most of the population uses services from the private sector, which accounts for 70 to 80% of total healthcare delivery. Moreover, the government is trying to expand access and improve health facilities, regulating private sector, promoting gender equity and reducing professional and managerial deficiencies in the district health system (Atun, 2014).

Study conducted showed that Lady Health Worker (LHW) program aimed to provide door step reproductive health services was constrained due to women's accessibility and mobility to health care facilities. Thus program could not achieve its optimal results in providing primary healthcare services to underserved communities. Qualitative data showed that LHWs restricted mobility into the area occupied by unrelated males was the main cause. Caste-based village hierarchies further discouraged visits beyond biradari boundaries and additionally the home visits were also not undertaken optimally. The findings suggested that LHW performance was constrained due to gender biases, caste-based hierarchies and LHW's poor and low caste socio-economic factors (Mumtaz, Z., et.al., 2013). A study was conducted to see how effectively motivated LHW can perform more actively in tuberculosis cases in Sindh using both internal and external sources of motivation. It was found that internal drivers of motivation like religious rewards and social recognition were more important. The LHWs indicated that financial incentives were less important than other sources of motivation and were usually not perceived as rewards

for their performance. It was concluded that internal motivation which is intrinsic and religious in Pakistan played important role in performance of LHWs (Khan, Mehboob and Rahman, 2019).

Government introduced a community based birth attendants, the community midwives (CMW) who were trained to conduct home-based deliveries. A qualitative research was conducted in one rural district namely Attock of Pakistan along with focus group discussions with CMWs and other community based health workers such as LHWs and LHSs, focusing on the role of CMWs in the existing primary health care system. Study found that they were inadequately trained, lacked resources for service delivery in their catchment areas and lacked integration in district health system. The CMWs have potential to play important role in reducing maternal mortality and in improving child healthcare if they are provided with adequate training and facilitated by health department (Sarfaraz and Hamid, 2014). Research also showed that the use of mobile phones by lady health supervisors was seen important in improving the quality of supervision in Badin District of Sindh Province. Again a capacity building project in Mirpurkhas district of rural Sindh, revealed quit a positive impact. Resultantly, with support from a donor funded project, Umeed-e-Nau Sindh government upgraded the curriculum for lady health supervisors and incorporated the use of mobile phones for providing the quality preventive healthcare services delivered by lady health workers (Portela and Qazi, 2018).

#### **DATA COLLECTION AND ANALYSIS**

The purpose of study was to analyze the impact of LHWP on maternal health services which is determined by two dependent variables (i) provision of antenatal care, and (ii) Toxoid injection to pregnant mothers during pregnancy, in rural districts of Sindh. First hand information in the form of three years (2017-2019) secondary data was collected from Sindh LHW Program office Hyderabad. The data was analyzed to see the impact on the use of maternal health service by analyzing the variables like Antenatal care and injection of Tetanus Toxoid to pregnant mothers aging from 19 to 49 years. The secondary data from *Pakistan Demographic and Health Survey for 2017-18* was also analyzed to see the impact independently complementing the results of Sindh LHWP office data.

The data obtained from program office of Sindh from 2017 to 2019 depicts significant improvement in maternal health care indicators. Table-1 shows that about 89 percent women were given antenatal care resultantly reduction in maternal deaths was noticed.

TABLE-1  
DISTRICT-WISE STATUS OF ANTENATAL CARE (2017-2019) IN SINDH

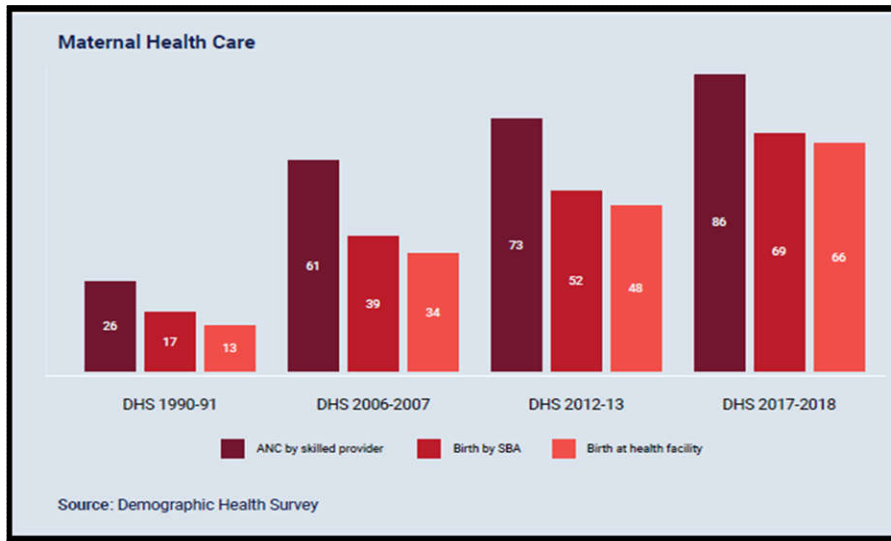
District	# of women delivered with 4+ ANC	Total deliveries	% Deliveries with 4+ ANC	# of women delivered with 4+ ANC	Total deliveries	% Deliveries with 4+ ANC	# of women delivered with 4+ ANC	Total deliveries	% Deliveries with 4+ ANC
	2017			2018			2019 (6 MONTHS)		
Badin	17613	19382	91	18596	20910	89	9497	10437	91
Dadu	18185	19176	95	18859	19836	95	8668	9226	94
Hyderabad	17682	19530	91	17158	18771	91	8037	8967	90
Sujawal	3745	4693	80	3205	3765	85	1355	1424	95
Jamshoro	9281	10287	90	9106	9952	91	4146	4487	92
Tando Allahyar	10582	12735	83	10714	12413	86	5419	6237	87
Thatta	6870	7245	95	6274	8804	71	3075	3404	90
Matari	9130	9509	96	9071	9500	95	4402	4582	96
T M Khan	6986	8275	84	6952	8200	85	3411	4209	81
Khi West	9285	9658	96	9533	9794	97	5120	5304	97
Karachi East	2852	2980	96	3316	3442	96	1860	1943	96
Korangi	6278	6561	96	6263	6580	95	3281	3497	94
Khi Central	4376	4392	99.6	4497	4636	97	2555	4647	55
Khi South	2445	2541	96	2486	2486	100	1405	1471	96
Malir	8824	9158	96	9061	9379	97	4771	5059	94
Jacobabad	7312	8786	83	6861	7880	87	3339	3736	89
Larkana	10783	11702	92	13308	14180	94	5872	6276	94
Shikarpur	9829	9829	100	11088	12475	89	5545	5545	100
Kamber	8856	10544	84	11556	12814	90	5915	6218	95
Kashmore	2684	4098	65	2552	4760	54	1336	2085	64
Khairpur	25504	28636	89	26443	29257	90	12185	13366	91
N' Feroze	20160	20190	100	18227	21232	86	8295	9501	87
S. Benazirabad	20498	21513	95	19562	21030	93	9437	10259	92
Sukkur	4766	7231	66	10401	13081	80	5353	5847	92
Ghotki	13009	15341	85	14684	16338	90	6341	7018	90
Mirpurkhas	12555	13694	92	12951	14408	90	6678	7274	92
Sanghar	19222	21348	90	19594	21460	91	9553	10173	94
Tharparkar	10071	13435	75	10397	13720	76	6320	7572	83
Umerkot	12411	15078	82	14006	16622	84	7048	9147	77
Average %	311794	347547	89	326721	367725	88.5	160219	178911	89.5

Source: Sindh LHW Program 2019.

The Table-1 shows year wise and district wise status of total number of deliveries and the deliveries in which four or four plus Antenatal care visits for service were carried out to the ever married pregnant mothers aging between 19 to 49 years. The data shows that on average 89% women received antenatal care with a significant improvement in rural districts of Sindh.

The data from *Pakistan Demographic and Health Survey 2017-18* also showed improvement in provision of maternal health services to the target population. Figure-1 shows that antenatal care provided by skilled worker show remarkable increase from 26% in 1990-91 to 86% in 2017-18. This data validates the data obtained from Sindh LHW Program.

**FIGURE-1**  
**MATERNAL HEALTH CARE IN PAKISTAN**



**Source:** Pakistan Demographic Health Survey 2017-18.

Similarly, the data obtained from Sindh LHW program office in following Table-2 shows the application of at least two Tetanus Toxoid injections to pregnant mothers during pregnancy. The intervention has shown vaccination of TT to pregnant mothers at improved percentage. The table shows year wise and district wise total number of deliveries and the delivery of mothers who were at least given two Tetanus Toxoid injections during their pregnancy. Data shows that 94% of women received TT injections in 2019 which show remarkable impact of the program.



**TABLE-2**  
**TETANUS TOXOID VACCINATION (2TTS) TO PREGNANT WOMEN**  
**BEFORE DELIVERY IN SINDH PROVINCE**

	District	2017			2018			2019 (6 month data)		
		Total Deliveries	# Women Completed TT before	%	Total Deliveries	# Women Completed TT before	%	Total Deliveries	# Women Completed TT before	%
1.	Badin	19382	18665	96	20910	19470	93	10437	9833	94
2	Dadu	19176	18198	95	19836	18875	95	9226	8673	94
3	Hyderabad	38558	36863	96	40746	38345	94	19663	18506	94
4	Sujawal	4693	3768	80	3765	3213	85	1424	1292	91
5	Jamshoro	10287	9740	95	9952	9503	96	4487	4264	95
6	Tando Allahyar	14980	13508	90	13717	12716	93	5911	5556	94
7	Thatta	7245	7059	97	8804	6491	73	3404	3086	91
8	Matiari	9509	9188	97	9500	9152	96	4582	4426	97
9	T. M Khan	16754	16247	97	18304	15643	85	7986	7512	94
10	Karachi West	9658	9274	96	9794	9565	98	5304	5104	96
11	Karachi East	2980	2885	97	3442	3338	97	1943	1863	96
12	Korangi	12638	12159	96	13236	12903	98	7247	6967	96
13	Karachi Central	4392	4325	98	4636	4474	97	4647	4526	97
14	Karachi South	2541	2491	98	2486	2630	101	1471	1414	96
15	Malir	9158	8360	91	7122	7104	100	5059	4519	89
16	Jacobabad	8786	7905	90	7880	7154	91	3736	3513	94
17	Larkana	11702	11288	96	14180	13589	96	6276	5922	94
18	Shikarpur	20488	19193	94	22060	20743	94	10012	9435	94
19	Kamber	10544	9288	95	12814	11752	92	6218	5874	94
20	Kashmore	4738	4465	94	4760	4012	84	2085	1991	95
21	Khairpur	28636	26628	93	17574	15764	90	13366	12456	93
22	Naushero	22623	20848	92	21232	20485	95	9501	9122	96
23	S. Benazirabad	21513	20758	97	21030	19654	94	10259	9461	92
24	Sukkur	7231	4777	66	42262	40139	95	5847	5440	93
25	Ghotki	15341	14672	96	16338	15654	96	7018	6747	96
26	Mirpurkhas	13694	12849	94	14408	13302	92	7274	6810	94
27	Sanghar	21348	19660	92	30746	28956	94	10173	9678	95
28	Tharparkar	13611	13325	98	13720	12612	92	8372	7353	88
29	Umerkot	15078	14454	96	16622	15724	95	9147	7906	86
<b>Average %</b>		<b>397284</b>	<b>372840</b>	<b>93</b>	<b>441876</b>	<b>412962</b>	<b>93</b>	<b>202075</b>	<b>189249</b>	<b>94</b>

Source: Sindh LHW Program 2019.

Further, remarkable reduction in Maternal Mortality Rate (MMR) was seen after analyzing the data obtained from the LHW program office Sindh for 2017-2019. The data in table-3 shows year wise number of live births and number of maternal deaths. The 175 maternal deaths were reported during 2019 against 174901 live birth deliveries. The MMR 2019 calculated by direct method i.e dividing maternal deaths with live births and multiplying by 100,000 reveal ratio of 100 maternal deaths per 100,000 live births which has been remarkably reduced due to this program intervention.

**TABLE-3**  
**DISTRICT-WISE MATERNAL MORTALITY RATE (2017 – 2019) IN SINDH**

District	2017			2018			2019 (6 months)		
	# Maternal Deaths	# Live Births	MMR	# Maternal Deaths	# Live Births	M MR	# Maternal Deaths	# Live Births	MMR
Tando Allahyar	26	12402	210	16	7678	208	9	3642	247
Umerkot	26	14621	178	23	11951	192	8	4346	184
Larkana	19	11559	164	25	14093	177	6	3280	183
Ghotki	23	14923	154	15	9217	163	11	6174	178
Tando M Khan	12	8067	149	26	19582	131	6	3433	175
Tharparkar	18	13132	137	14	12067	116	10	6067	165
Hyderabad	25	18920	132	11	9703	113	7	4428	158
Jamshoro	13	9962	131	23	20384	113	11	7127	154
Matlari	10	9210	109	18	18305	98	8	5361	149
Sanghar	21	20725	101	6	6488	92	13	8850	147
Dadu	19	18846	101	3	3367	89	7	5219	134
S. Benazirabad	21	21206	99	12	13476	89	12	10123	119
Kashmore	4	4068	98	14	16079	87	11	10022	110
Karachi West	9	9535	94	8	9215	88	2	1905	105
Jacobabad	8	8572	93	7	8276	85	5	6066	82
Karachi South	2	2494	80	3	3554	84	6	7441	81
N' Feroze	14	19811	71	24	28759	83	7	8744	80
Badin	13	18993	68	10	12974	77	3	4068	74
Khairpur	19	28179	67	6	7950	75	4	5768	69
Kamber	6	10464	57	11	15977	69	8	13133	61
Sujawal	2	4320	46	14	20889	67	6	9951	60
Karachi Central	2	4345	46	9	14064	64	5	9263	54
Mirpurkhas	6	13520	44	10	20735	48	4	9079	44
Malir	4	9014	44	6	12646	47	3	6902	43
Thatta	3	7158	42	1	2432	41	2	4960	40
Shikarpur	2	9744	21	8	20827	38	1	4607	22
Korangi	1	6460	15	3	9679	31	0	2078	0
Karachi East	0	2955	0	0	4680	0	0	1421	0
Sukkur	0	7222	0	0	4605	0	0	1443	0
	<b>328</b>	<b>340427</b>		<b>326</b>	<b>359653</b>		<b>175</b>	<b>174901</b>	

Source: Sindh LHW Program 2019.

The secondary data about Maternal Mortality Ratio obtained from *Pakistan Maternal Mortality Survey 2019* is depicted in the following Table-4 which shows that Maternal Mortality Ratio (MMR) i.e. live births in households divided by maternal deaths and multiplied by 100,000 in Pakistan is 189 maternal deaths per 100,000 live births. The MMR is higher in rural areas i.e 203 per 100,000 live births as compared to urban areas i.e. 159 maternal deaths per 100,000 live births. In Sindh MMR has been estimated as 237 maternal deaths per 100,000 live births.

**TABLE-4**  
**ESTIMATED MATERNAL MORTALITY RATIO**  
**IN PROVINCES OF PAKISTAN -2019**

Maternal mortality ratios for the 3 years preceding the survey, by residence and region, Pakistan MMS 2019			
	Maternal deaths <sup>1</sup>	Live births	Maternal mortality ratio
<b>Residence</b>			
Urban	32	20,333	159
Rural	88	43,290	203
<b>Region</b>			
Punjab <sup>2</sup>	52	31,753	165
Sindh	33	13,786	237
Khyber Pakhtunkhwa <sup>3</sup>	23	14,075	161
Balochistan	13	4,010	317
<b>Total<sup>4</sup></b>	<b>120</b>	<b>63,623</b>	<b>189</b>
Azad Jammu and Kashmir	9	8,501	108
Gilgit Baltistan	12	7,712	162

<sup>1</sup> A maternal death is defined as the death of a woman while pregnant or during childbirth or within 42 days after delivery, for which there was a verbal autopsy which was classified as being either a direct or indirect maternal death

<sup>2</sup> Punjab includes ICT

<sup>3</sup> Khyber Pakhtunkhwa includes the merged districts of former FATA

<sup>4</sup> Total excludes Azad Jammu and Kashmir and Gilgit Baltistan

Source: Pakistan Maternal Mortality Survey, 2019.

The comparison of actual data obtained from Sindh LHW program office and estimated data of Pakistan MMR Survey 2019 reveal remarkable decline in the MMR indicator showing that due to intervention of Sindh LHW program, the maternal health care service utilization has increased causing significant reduction in maternal mortality ratio from estimated 237 to 100 maternal deaths per 100,000 live birth in Sindh.

#### CONCLUSION AND RECOMMENDATIONS

In this study we analyzed the impact of Lady Health Worker program on use of maternal health service by target population who are married women aging between 19 to 49 years in Sindh province. The maternal healthcare depends on antenatal care and the injection of Tetanus Toxoid vaccination to pregnant mothers. For this purpose empirical evidence was drawn based on the secondary data provided by the Sindh LHW program office located at Hyderabad and other secondary sources to reach at conclusion. After analyzing the data obtained from various sources following conclusion was drawn. The presence of a lady health worker in a community has

a remarkable positive influence on uptake of maternal health services which is determined by antenatal care and tetanus toxoid injection to pregnant mothers, resulting into significant decline in MMR and IMR.

#### **ANTENATAL CARE**

The Secondary data obtained from Sindh LHW program for Years 2017 to 2019 pertaining to all districts of Sindh province revealed remarkable impact of antenatal care visits carried out by the lady health workers in areas of their assignment. On the average 89% of total number of clients had carried out at least four antenatal care visits during their pregnancy assisted by LHW of that area. This was compared with the secondary data from *Pakistan Demographic and Health Survey 2017-18* where in entire country the antenatal care visits were shown as 76 %. Thus a remarkable improvement in uptake of healthcare service was seen showing positive impact of LHW program on clients.

#### **TETANUS TOXOID INJECTION AND MATERNAL MORTALITY RATE**

The second determinant of uptake of maternal healthcare service is application of at least two tetanus toxoid injections to mothers during pregnancy to prevent maternal tetanus. The secondary data obtained from Sindh LHW program office for years 2017 to 2019 pertaining to all districts of Sindh province revealed that out of total deliveries 94% women received two injections of tetanus toxoid, indicating that deaths due to maternal tetanus have been reduced significantly. This is evident from Maternal Mortality ratio of Sindh province where data from Sindh LHW program for 2019 show significant decline in MMR which is 100 maternal deaths per 100,000 live births. This is much lower as compared to estimates from *Pakistan Maternal Mortality Survey 2019*, which shows MMR for Sindh province as 237 maternal deaths per 100,000 live births. This remarkable decline in maternal death ratio reveals positive impact on utilization of maternal health care service by target population in Sindh province and provides an empirical evidence that under Sindh LHW program intervention the performance of lady health workers has produced positive impact on uptake of maternal health care services.

The role of LHWs in providing maternal healthcare to target women, especially in rural areas which lack facilities and resources is recognizable. The areas where LHWs are performing their duties has shown improvement in uptake of primary healthcare services by communities. Currently in Sindh provinces this program has catered services to 46% areas where LHWs are providing services (SLHW, 2019). There is dire need to expand the program to the areas which are still not covered by this program. This is due to shortage of LHWs as against the sanctioned strength of 22576; only 20988 have been deployed with 1588 positions still lying vacant (SLHW, 2019). The provision of medicines, hospital supplies and checking kits to LHWs is also important along with provision of *pucca (paved)* road infrastructure for easy access and mobility of service provider to target population and government health facility. The workers need to be given bonuses and incentives to retain them besides provision of security while performing visits in far flung areas by involving local community people and police.

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