

ORIGINAL ARTICLE

**PUBLIC PRIVATE PARTNERSHIP AND UTILIZATION OF MATERNAL AND CHILD HEALTH SERVICES IN DISTRICT ABBOTTABAD, PAKISTAN**

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**Background:** Public Private Partnership has been experimented as an approach in Pakistan in 2005 and in eighteen districts of Khyber Pakhtunkhwa including Abbottabad in 2011, to improve delivery of maternal and child health services. This study was conducted to assess the utilization of maternal and child health services before and after implementation of Public Private Partnership in district Abbottabad. **Methods:** A cross sectional study was conducted in district Abbottabad from July to December 2014. Study included all the 53 basic health units, outsourced to People's Primary Healthcare Initiative in 2011. Data related to selected maternal and child health services indicators (family planning services, antenatal and post-natal care, safe delivery, tetanus toxoid vaccination of pregnant women and child immunization), before and after the introduction of Public Private Partnership, was collected. Significance tests (*t*-test) was applied and *p*-value <0.05 was taken as significant. **Results:** Marked improvement was observed in vaccination of target children (127%) and women (42%), respectively. Similarly, utilization of family planning services, antenatal and postnatal care increased by 60%, 9% and 38%, respectively. Public Private Partnership had significant effect on postnatal visits (*p*<0.001), family planning services (*p*<0.001), women vaccinated with tetanus toxoid (*p*<0.001) and children vaccinated in Expanded Program of Immunization (*p*=0.003). **Conclusion:** Public Private Partnership improved the utilization of maternal and child health services, particularly family planning services and maternal & child immunization. The partnership may be scaled up and extended, for an improved coverage of maternal and child health services.

**Keywords:** Pakistan; Public Private Sector Partnership; Primary Health Care; Child Health Services; People's Primary Healthcare Initiative

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**INTRODUCTION**

Public-private partnerships (PPP) could be more accurately described as public sector programs with private sector participation.<sup>1</sup> In recent years, the PPP has been experimented, at both national and international levels, as an approach to ensure delivery of comprehensive public health services in an efficient, effective and fair manner.<sup>2</sup> Collaborations in this category include Roll Back Malaria, Safe Injection Global Network, and Stop TB and the Global Alliance for Vaccines and Immunization.<sup>1</sup>

Public-private partnerships has been tried and tested in different sectors including health, both in developed and developing setting.<sup>2</sup> In Pakistan, however, it's not more than a decade or so old and was introduced due to failure of Primary Health Care (PHC) system in terms of access, coverage, and availability of services. Also, there was increasing international pressure on achievement of Millennium Development Goals (MDGs). Building of PPP was suggested for provision of health care services through the existing public sector health facilities. The PPP was first introduced at district Rahim Yar

Khan Pilot by National Rural Support Program as pilot project and in Khyber Pakhtunkhwa (KP) province, leasing out of Rural Health Center (RHC) Nahaqi to Abaseen Foundation was the first to test. The pilots proved to be successful leading to replication of PPP continuing until this day, under the umbrella of the People's Primary Health Care Initiative (PPHI).<sup>2,3</sup> PPHI, started in 2005, has now been implemented in over 60% of districts in Pakistan. Encouraged by that experience, Basic Health Units (BHUs) in eighteen districts of KP were handed over PPHI including Abbotabad.<sup>3</sup> PPHI started working under the partnership deed early in 2012. Since then, it has traversed a long distance despite law & order situation, anti Non-Governmental Organizations (NGOs) sentiments, and resource constraints as few among the several challenges. Review missions have generally reported this partnership as a yielding one.<sup>4</sup>

It is important to note that the given initiatives were implemented in the context of Primary Health Care (PHC). PHC is delivered to communities under the spirit of self-reliance in an

equitable and cost affordable way. Maternal and child Health (MCH) is one of the eight principal elements of PHC.<sup>5</sup> Furthermore MCH is an area that requires specific focus in view of our weak indicators in that arena. An estimated 276 Pakistani women die for every 100,000 live births and only 34% deliver in facilities. The infant and under five mortality rates are 78 and 94 deaths per 1,000 live births, respectively. The Contraceptive Prevalence Rate (CPR) has remained stagnate at around 30% for the past several years.<sup>6</sup> It is relevant to mention that Pakistan was also a signatory of MDGs with Goals 4 & 5 particularly focusing on MCH; however, progress on improving maternal and child health has been slow and remains a challenge.<sup>7</sup> The poor progress in area of maternal and child health demands for combined efforts of public and private sectors.<sup>8</sup>

Therefore, this study aimed to assess the utilization of MCH Services in district Abbottabad Pakistan, before and after the introduction of Public Private Partnership. The study measured the percent change in given MCH utilization indicators in Basic Health Units (BHUs) of district Abbottabad. The study was expected to furnish important information regarding usefulness or otherwise of PPP and its importance in contributing towards improving the MCH care delivery.

## MATERIAL AND METHODS

A cross sectional study, of six months' duration (July to December 2014), was conducted in District Abbottabad. Study included all the 53 BHUs of department of Health that lie within administrative jurisdiction of Health Directorate Abbottabad, providing MCH services and outsourced to PPHI in 2011. The BHUs of the district on average cater for a population of 25,000–30,000, staffed by male and female care providers with security and support staff. Ethical review was obtained from Khyber Medical University, Peshawar. Formal permission was sought from management and facility in-charge persons to access the relevant data. Data was de-identified for confidentiality, hiding identity of the healthcare facilities to which a set of data might relate, and also to keep confidentiality of the person seeking and providing care. Data was collected using a predesigned proforma bearing all the variables for entry into compilation from the relevant record.

The data was collected for the years 2010–13; pre-PPP period (2010 and 2011) and post PPP period (2012–13). Data was collected for selected MCH service indicators including; (i) the antenatal visits made, defined as visits by pregnant ladies during the course of their pregnancy to the sampled healthcare facilities for antenatal care services; (ii)

deliveries conducted defined as birth of babies to the pregnant women with or without a surgical intervention at the sampled healthcare facilities; (iii) postnatal visits made: the visits by a mother (with or without the new-born) to the sampled healthcare facilities for postnatal care services; (iv) family planning clients counselled: counselling services provided to the client at the sampled healthcare facilities; (v) Children vaccinated in Expanded Program of Immunization (EPI): Children vaccinated at the sampled healthcare facilities and (vi) Tetanus Toxoid (TT) vaccination of women: women aged 15–49 years vaccinated for TT at the sampled health facilities.<sup>9</sup> The data collected was entered into SPSS 20.00 for summarization, as well as, computing the relevant descriptive statistics including mean and standard deviation for continuous variables and percent calculation for comparison. Paired t - test was applied, keeping the P value at <0.05 as significant. Percent change in utilization of MCH indicators was also calculated.

## RESULTS

The study conducted at all the 53 BHUs of district Abbottabad. The effect of PPP was assessed by determining the change in selected MCH indicators. Results of the study for core variables were categorized under maternal and child health services. The data for selected indicators, from pre-PPP (2010–11) was compared with that of post PPP period (2012–13). Analysis of the data indicated a significant change in several of the selected indicators pointing towards a positive effect on utilization of MCH services by the patients and clients of the catchment population when compared to the baseline data in the pre PPP era. Comparison in number of women & children receiving MCH services before and after outsourcing showed significant increase in number of pregnant women receiving antenatal care, i.e., from 8437 in 2010 to 11740 in 2013. Number of family planning clients served increased from 2319 in 2010 to 10219 in 2013. The number of children immunized under EPI program increased to 21656 in 2013 when compared with baseline data, i.e., 12594 in 2010. There were 3852 facility based deliveries in 2010 and 5253 in 2013. Due to the lack of Tetanus Toxoid (TT) vaccination of the pregnant women and post-natal care services at the given health facilities, the baseline for TT vaccination of the pregnant women and post-natal visits made by mothers couldn't be established in the pre-PPP period. However, against the baseline figure of 12360 in first year of PPP (2012) the number of women receiving TT immunization increase to 17593 in 2013. Similarly, the number of

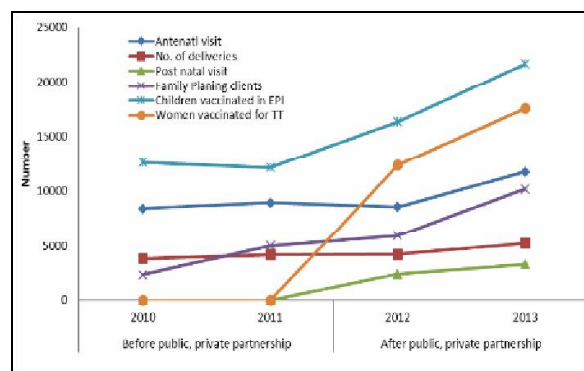
women receiving postnatal care increased from 2407 in 2012 to 3317 in 2013 (Figure-1). A significant improvement was observed in terms of the post-natal visits ( $p<0.001$ ), family planning clients served ( $p<0.001$ ), children vaccinated in EPI ( $p=0.003$ ), and pregnant women vaccinated for TT ( $p<0.001$ ) (Table 1).

The antenatal visits by pregnant ladies exhibited a mean improvement of around 9% during the post intervention period of two years. The facility based deliveries showed a trend exactly similar to antenatal visits over the same period of two years. The family planning services went up by a mean rise of 60% during the post intervention period of two years. The EPI services utilization by the target children showed a mean improvement of 127% during the post intervention period of two years. The postnatal visits when analysed against its baseline figure of 2407 in first year of PPP it showed a successive increase of 38%, and similarly TT vaccination of the pregnant women showed an increase of 42%.

**Table-1: Mean number of clients who received maternal and child health services before and after public private partnership from year 2010 to 2013(53 BHUs)**

| Indicators                     | Before contracting out 2010–11 | After contracting out 2012–13 | p-Value |
|--------------------------------|--------------------------------|-------------------------------|---------|
|                                | Mean (±SD)                     | Mean (±SD)                    |         |
| Antenatal visits               | 328.2 (±404.8)                 | 383.1 (±275.9)                | 0.280   |
| No. of deliveries conducted    | 152.1 (±200.1)                 | 179.1 (±227.6)                | 0.205   |
| Postnatal visits               | 0*                             | 108.0 (±105.3)                | <0.001  |
| Family planning clients served | 138.6 (±475.0)                 | 305.4 (±290.6)                | <0.001  |
| Children vaccinated in EPI     | 466.8 (±485.3)                 | 716.9 (±574.5)                | 0.003   |
| Women vaccinated for TT        | 0                              | 565.2 (±427.3)                | <0.001  |

\* Services not available



**Figure-1: Comparison in number of clients receiving maternal and child health services before (2010-11) and after (2012-13) Public Private Partnership (53 BHUs)**

## DISCUSSION

Analysis of the data revealed a significant change in several of the selected indicators pointing towards a positive effect on utilization of MCH services by the patients and clients of the catchment population when compared to the baseline data in the pre PPP era. A significant improvement was observed in terms of the number of post-natal visits ( $p<0.001$ ), number of family planning clients served ( $p<0.001$ ), number of children vaccinated in EPI ( $p=0.003$ ), and pregnant women vaccinated for TT ( $p<0.001$ ). It is worthwhile to note that besides a huge increase in services utilization, this PPP model was able to initiate and enhance services that either totally lacked in the pre-PPP era in the district or documentation was not available for, i.e., TT vaccination of women and postnatal care services.

The findings of this study are by and large consistent with the findings of other studies conducted throughout the developing world to assess and evaluate the effect of PPP on services delivery. This improvement was noted irrespective of the mode of PPP. However, most studies noted relatively more improvement in service delivery contracts than management alone contracts. The increase was noticed in services utilization as well as quality of care provided.<sup>10</sup> A Haiti based partnership recorded a 3% rise in antenatal care and 32% increase in vaccination coverage while our study noted a 9% mean increase in antenatal visits while vaccination showed a steep rise of as high as 120% mean. This drastically high rise might be due to a robust outreach vaccination activity attributable to equitable distribution of vaccination workers, who otherwise prefer and are able to manage their stay in urban facilities through political pressure and spoils in the management chain.<sup>11</sup> In a Bolivian partnership model, rise in deliveries was 21% whereas our study showed a mean rise of 9% equalling 18% for two years' time span after PPP. The little difference of 3% may be due to the fact that the contracting out in the reference case was of an urban PHC unit, whereas in our case they are rural units. As such the rise noted appears to be an impressive one.<sup>12</sup>

Twenty-seven vigorous studies on PPP interventions, fulfilling Cochrane quality criteria, from different developing countries, were systematically reviewed for credible impact on antenatal & postnatal care, facility-based births, emergency obstetric care and neonatal illness. PPP was found to have an overall beneficial effect on increasing the use of maternal care services, particularly in antenatal care, facility-based births and C-sections. However, PPPs fail to impact postnatal care.<sup>8</sup>

There are ample instances of PPPs for Maternal and Neonatal Health (MNH), implemented in Low and

Middle Income Countries (LMICs), using different partnership arrangements between the public and private sectors. In the area of MNH service delivery, PPPs mostly involve government financing of services delivered by private health providers such as through contracting out of health services, cash transfer on availing services, voucher redemption schemes involving private providers, and national insurance. Less common are cases of NGOs providing financial or other support to MNH services, government health facilities, or Community Based Organizations purchasing services from government.<sup>8</sup>

A study in Rwanda assessed the effect of performance-based payment of health-care providers (Payment for Performance; P4P), one model of PPP, on use and quality of child and maternal care services in health-care facilities. Findings showed that in the intervention group there was 23% increase in the number of institutional deliveries. Improvement was also observed in quality of antenatal care, as measured by compliance with Rwandan prenatal care clinical practice guideline. However, no improvement was seen in the number of women completing four prenatal care visits or of children receiving full immunization schedules.<sup>13</sup>

A study of primary care facilities in Haiti, which did not have a comparison group, showed increases in immunization coverage and the number of attended deliveries after the introduction of performance-based bonus payments.<sup>14</sup> A quasi-experimental study in Cambodia, which had a comparison group, showed that (Payment for Performance; P4P) schemes increased immunization rates, but facilities in the intervention group received substantially more resources than did those in the control groups, suggesting that resources rather than the P4P mechanism could explain the positive outcome.<sup>15</sup>

In Pakistan, the notion of PPPs in the public policy sphere is mainly confined to private sector contribution to financing, infrastructure development and maintenance while private sector partnerships for service delivery receive less policy emphasis. A number of hybrid PPP models for service delivery have cropped up in recent years in the area of Maternal and Neonatal Health driven by donor support, philanthropic support and in certain instances through support of provincial governments.<sup>8,16</sup> Contracting out of government health facilities to NGOs is the next most common model, with fewer schemes but an extensive number of facilities. Khyber Pakhtunkhwa has the largest concentration of PPPs involving government financing of NGO services, while Sindh and Balochistan are the most prolific in terms of models involving NGO support to existing government health facilities for improving MNH service delivery. Punjab has the fewest examples. PPPs have succeeded in providing staff and support for functioning

of health facilities in remote locations. There is a reasonable market in Pakistan for undertaking PPPs. Many of the initiatives are home-grown.<sup>8</sup>

However, these initiatives have usually followed an adhoc adoption process rather than being guided by evidence. PPP models are growing in the absence of strategic direction from the state, having mostly flourished on the initiative of the private sector. Communication is weak between the implementing private sector and the government, and information gaps also exist between district and provincial tiers. There is an absence of external performance assessment of PPPs; existing internal monitoring is insufficient and not standardized. Moreover, many initiatives are loosely dubbed as PPPs even though they may lack meaningful participation due to lack of a common understanding and application of a standardized definition.<sup>16</sup>

To our knowledge this is the first study on this topic in the district Abbottabad. Inclusion of all health facilities is the main strength of this study. The importance of PPP is discussed on many forums but there is paucity of original research on this subject. It is anticipated that the findings of this study will inform the existing policies and future planning. There are some limitations of the study. Data related to post-natal care and TT immunization of women could not be collected due to lack of availability of said services at BHUs in pre PPP period. Due to time and financial constraints only one district was included in this study whereas PPP is implemented in many other districts.

## CONCLUSION

The foregoing data evidence suggested that PPP was instrumental in bringing out clear change in the entire key indicators related to utilization of primary care services especially maternal and childcare with manifold increase in antenatal, natal, postnatal, family planning and women & child vaccination services.

From the very obvious improvement and literature evidence, it is suggested to further scale up and extend the public private partnership especially for an improved coverage and care under PHC focusing MCH.

## AUTHORS' CONTRIBUTION

All authors contributed to conception and design. All authors revised the manuscript and approved the final version and takes full responsibility for the manuscript.

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