

BMJ Open Health insurance, social safety net and maternal health service utilisation in Pakistan: a population based cross-sectional study

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ABSTRACT

Objective The objective of the study is to examine the impact of health insurance and social safety net programmes on maternal health service utilisation (MHSU) in Pakistan.

Design Cross-sectional.

Settings Data were obtained from Pakistan Demographic Health Survey 2017–2018.

Participants Out of 12 364 Pakistani ever-married women aged 15–49 years included in the survey sample, 7752 were included in the study.

Main outcome measures Three response variables (antenatal care (ANC) by skilled attendants (<4 visits=inadequate vs 4 or more visits=adequate), health facility-based delivery (home vs health) and postnatal care (yes vs no) were combined to assess MHSU. Health insurance was derived from the question ‘are you covered with any health insurance?’ and social safety net was derived from enrolment in social safety net programmes. Logistic regression analyses were conducted, and results were reported as ORs with 95% CIs. Results of adjusted logistic regression models were fit to control for individual and community-level factors.

Result Prevalence of social safety net was larger than health insurance (7.7% vs 2.0%) while attendance of ANC+4, facility-based delivery and postnatal care was 48.5% (n=3760), 65.9% (n=5097) and 22.6% (n=1745) respectively, among respondents. Women were twice more likely to access maternal health services when they were covered by health insurance (adjusted OR 2.61, 95% CI 1.19 to 5.74, p<0.017) after adjusting for age at marriage, education level, wealth index, rural/urban area, parity, employment, empowerment status, exposure to media, visits and distance to health facility while no significant association of social safety net programmes with MHSU was found.

Conclusion Expanding access to health insurance can provide comprehensive coverage for maternal healthcare services. Social safety net programmes can be made conditional, subject to regular health checkups for mothers and children to improve maternal and child health outcomes.

INTRODUCTION

Universal health coverage (UHC) is fundamental to achieving the health objectives

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Use of demographic health survey provides comparable data to examine health insurance coverage and its association with maternal health services utilisation makes the findings statistically generalisable.
- ⇒ The coverage of health insurance in Pakistan is low. Prioritising health insurance for women between the ages of 15 and 49 years is possibly the most significant and attainable way forward to boost maternal health services uptake.
- ⇒ The cross-sectional nature of the Demographic and Health Survey data does not allow causal inference.
- ⇒ Using maternal and child information 5 years prior to the mother’s interview may cause recall bias.

of Sustainable Development Goals (SDGs). It aims to ensure that people have access to health services particularly those in need without suffering financial hardship.¹ The achievement of UHC, as articulated in SDG target 3.8, represents a logical approach towards advancing the attainment of other health-related targets within the SDG framework. To achieve UHC, it is essential to provide people with access to quality and affordable health services, safe and effective essential medicines and vaccines, and financial risk protection. However, many nations face enduring resource scarcities and deficiencies in the provision of health services, impeding their ability to attain SDG 3.8 on UHC. Attaining UHC is also crucial for realising SDGs associated with maternal and child health targets, that is, reducing the maternal mortality ratio to less than 70 per 100 000 live births globally (as indicated by SDG 3.1) and putting an end to avoidable deaths of newborns and children under the age of 5 (as indicated by SDG 3.2) by the year 2030. Evidence yet suggests that at least half of the world population faces a lack of access to vital healthcare services.² Approximately

1.4–1.9 billion individuals experience catastrophic or insurmountable health costs each year due to illnesses.³

Pakistan is a developing and the sixth most populous nation in the world. Access to health services lags behind that of neighbouring countries in the Eastern Mediterranean region.⁴ With the allocation of healthcare consistently below 1% of GDP,⁵ a significant portion of Pakistan's population is uninsured, and therefore, lacks the necessary financial protection when accessing health services.^{4,6} Multiple Indicator Cluster Survey showed that 3.2% of women and 3.9% of men reported having health insurance in Pakistan. Similarly, only 2.3% of children under the age of 5 years are covered by health insurance.⁷ The country's health insurance coverage is far below the ideal level; families are forced to bear exorbitant healthcare costs. People are aware of health circumstances but are reluctant to buy health insurance due to unawareness and poverty.⁸ Consequently, maternal and child health outcomes also lag behind those of other nations.^{9,10} It is estimated that almost one-quarter of pregnant women do not use any prenatal health services while half of all women do not undergo institutional delivery.⁶ Despite the implementation of targeted policies in recent years, these inequalities persist.⁹ Suboptimal health indicators, weak health service delivery and high out-of-pocket health expenditure are concrete barriers preventing and denying poorest and marginalised groups access to healthcare services. Women, in particular, are unequally impacted by poor quality of care and insufficient essential commodities and services.¹¹ Thus, solving either health service delivery problems or health insurance coverage or both would result in healthcare and health insurance being affordable for everyone.

Health insurance schemes and social safety net programmes have garnered worldwide attention as a source of providing financial protection ensuring inclusion and equity, enhancing well-being and shielding families from financial catastrophe.¹² International organisations, such as the United Nations, the International Labour Organization and the World Bank have begun discussing the development of comprehensive health insurance and a wide range of social protection programmes to promote healthcare utilisation.¹¹ From health coverage initiatives in low-income and middle-income countries, it is evident that the success of implementing health coverage programmes will give rise to a lasting impact on expanding the use of maternal health services. For instance, in Indonesia, a health insurance scheme successfully reduced socioeconomic inequality in maternal healthcare utilisation. In 2005, Ghana initiated its first National Health Insurance Scheme to increase service utilisation and reduce the impact of out-of-pocket expenditure. This initiative particularly increased maternal health services for marginalised populations and reduced catastrophic payments and exorbitant fees.^{13,14} Gabon reported that in terms of health insurance coverage, the percentage of insured mothers had better utilisation of skilled providers-based antenatal care

(ANC) uptake, facility-based deliveries compared with those not provided with health insurance.¹⁵

Large-scale social safety net programmes have an excellent opportunity to influence maternal health outcomes, irrespective of their wider objectives of reducing poverty and enhancing human capital. Nonetheless, a dearth of research is available to demonstrate the connections between social protection services other than social insurance and maternal health service utilisation (MHSU). Adato and Bassett proposed that social protection in terms of monetary transfers influences health by covering for the direct cost of healthcare such as transport, medical expenses and opportunity costs. When women receive cash transfers, household income and the proportion of household income controlled by women increase.¹⁶ Consequently, one could anticipate a rise in the demand for women's health-related services. According to the Pakistan Demographic and Health Survey (PDHS), Pakistani women have greater access to social protection in terms of cash transfers than health insurance¹⁷; however, there is insufficient evidence of whether cash incentives affect maternal health outcomes and, if so, via which channels. Insufficient evidence-based evaluations of the relative efficacy of health insurance coverage and safety net programmes in enhancing MHSU motivated this study. Thus, the aim of the study is to investigate the association of health insurance and social safety net availability with MHSU in Pakistan. The findings will provide a broader perspective on the importance of health insurance and social safety nets for achieving UHC. Additionally, the study will enable policy-makers to better understand health insurance coverage among populations needing support to use maternal health services. It will also offer suggestions for improving the current situation.

MATERIALS AND METHODS

Study setting and data source

With the approval of the Monitoring and Evaluation to Assess and Use Results, Demographic and Health Surveys (MEASURE DHS) (www.measuredhs.com), we used dataset PDHS 2017–2018.¹⁷ PDHS 2017–2018 was a fourth survey conducted by National Institute of Population Studies (NIPS) as part of the international MEASURE DHS. The PDHS survey of 2017–2018 covered 12 338 households of which 12 364 were successfully interviewed, yielding a response rate of 94.3%.¹⁷ However, our analyses were limited to (n=7752, age 15–49 years) women who had given birth in the 5 years prior to the survey and in case women who had two or more surviving births in the last 5 years before the survey was conducted, only most recent birth was considered.

Study variables

Outcome measure: We used three widely recognised indices (ANC by skilled attendants, use of skilled delivery attendants and postnatal care) to assess MHSU for the most recent birth in the PDHS 2017–2018. Three

response variables were created from questions included in the maternal health component of PDHS questionnaire. Women were asked:

(1) Whether they were checked by a trained health professional (a doctor, nurse or midwife) at least once during pregnancy, that is, ANC (<4 visits=inadequate vs 4 or more visits=adequate); (2) whether the women had health facility-based delivery during the recent birth (home vs health) and (3) whether women received a medical check-up from a health professional (a doctor, nurse or midwife) after childbirth within 42 days after delivery for the most recent birth (yes vs no).

We combined these three indicators and coded as '0' (reference category) if a woman does not meet any of the three indicators, that is, she did not have a minimum of four ANC visits, she did not deliver at an institution; mother and her baby did not have been checked before discharge/delivery and after discharge/delivery. The selection of these outcomes was based on standards of antenatal and delivery care recommended by the WHO 2007.¹⁸

Health insurance and social safety net measures

The explanatory variables included health insurance coverage and social safety net. Both were measured dichotomously.

1. The health insurance coverage was derived from the question 'are you covered with any health insurance?'. Response is coded as 0='no' and 1='yes'. For the purpose of the analysis, the responses were coded as 1='yes' if respondent was covered by any mutual health organisation/community-based health, or health insurance through employer, or any health insurance schemes (Sehat Sahulat) or other privately purchased commercial health insurance and 0='no' otherwise.
2. Social safety net programme provides eligible families with unconditional cash transfers. Recognising the goal of promoting women's empowerment the transfer is paid directly to any ever-married woman. Enrolment in social safety net programmes (unconditional cash transfer) was coded as 0='no' and 1='yes'.

Individual-level and community-level measures

Individual factors included age at first marriage (<18 years and >18 years), marital status, parity categorised into 1, 2–4, >4, wealth status classified into five categories (poorest, poorer, middle, richer and richest), level of education (<4 years/>4 years of formal education), mass media exposure to television (TV), employment status, decision-making ability of respondents ('wife involved in decision-making' was taken as women autonomy. All other responses (husband alone, family elders and other person) were labelled as 'wife not involved in decision-making'). Factors at community level included women's residential location: encompassed as urban and rural, whether women had visited the health facility in past 12 months and perceived difficulty of a distance to the health facility was categorised as problem versus not a problem.

Data analysis and model estimation

STATA V.18 was used for analysis. The model estimation was done using econometric techniques. The PDHS survey uses a multistage cluster sampling design; consequently, the dataset was converted to account for the cluster design by taking into consideration the primary sampling units, final weights and sampling strata.

Descriptive statistical findings and weighted proportions of sociodemographic data have been computed related to health insurance, social safety net and MHSU. The χ^2 test was used to determine the significance of association between variables. Univariate and multivariate binary logistic regression models were estimated and ORs with 95% CIs were reported. All the regression analysis models were adjusted to consider the complex sampling design of the PDHS 2017–2018. First, the association between MHSU and the independent variables: health insurance coverage and social safety net were reported in model 0. Subsequently, model 1 reports the effects of health insurance and model 2 reports the effects of social safety net after adjusting for covariates including respondents' age at marriage, residential classification, media exposure, wealth index, education level, employment status, parity, visits and distance to health facility and women decision-making autonomy.

The specification of the MHSU model is given as:

$$\text{logit}(p) = [\ln p / (1-p)] = \beta_0 + \beta_1 \times 1 + \beta_2 \times 2 \dots \beta_{kkk}$$

where p=probability of the event occurrence (MHSU) influenced by a set of predictive variables as specified by parameters $\beta_0, \beta_1, \beta_2 \dots \beta_k$ as the coefficients and $X_1, X_2, \dots X_k$ are the variables that are predicted. $P/(1-P)$ is the odds measure and so the ratio of $P/(1-P)$ is the log of odds or the logit of P.

Patient and public involvement

None.

RESULTS

Percentage distribution of MHSU, health insurance and social safety net

Based on the inclusion criteria, about 7752 Pakistani ever-married women; aged 15–49 who had their delivery within the past 5 years before the PDHS (2017–2018) survey were included in the study. The overall prevalence of women who had the recommended number of ANC visits (ANC+4) was 48.5% (n=3760), women who had facility-based delivery was 65.9% (n=5097) while women who had used postnatal services was 22.6% (n=1745). Of the total participants (7752), the overall health insurance coverage was available to only 2.0% (n=152) of women while 7.7% (n=594) women received unconditional cash transfers under safety net programme (table 1). As illustrated in figure 1, around 62.5% (n=95), 78.3% (n=119) and 25.7% (n=39) of respondents who were covered by health insurance attended a recommended number of ANC+4 visits, facility-based delivery and postnatal care

Table 1 Coverage of MHSU, health insurance and safety net

Study variables	Total	Yes	No
		n (%)	n (%)
Antenatal care (≥ 4 visits)	7752	3760 (48.5)	3992 (51.5)
Facility-based delivery	7732	5097 (65.9)	2635 (34.1)
Postnatal care	7732	1745 (22.6)	5987 (77.4)
Health insurance coverage	7752	152 (2.0)	7600 (98.0)
Safety net	7752	594 (7.7)	7158 (92.3)

Pakistan Demographic and Health Survey 2017–2018.
MHSU, Maternal Health Service Utilisation.

services, respectively. Whereas about 24.7% (n=163) attended recommended ANC+4 visits, 52.6% (n=310) had used facility-based skilled delivery services, and 19.6% (n=116) had used postnatal care services among the respondents who received social safety net (figure 1).

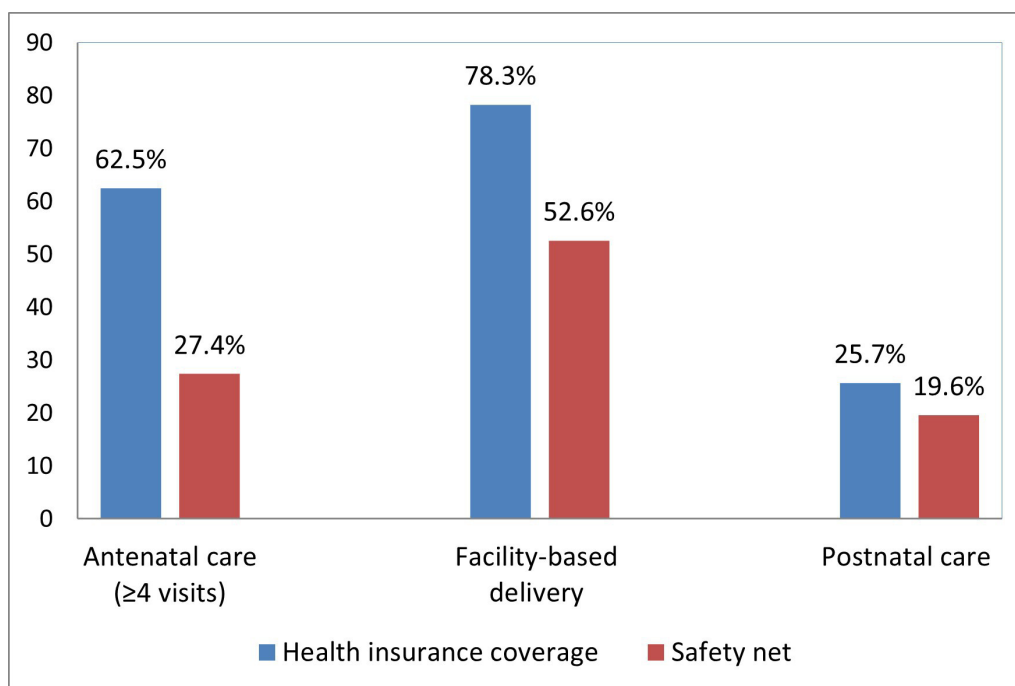
Covariates associated with MHSU, health insurance and social safety net

The analysis of the dataset by using simple χ^2 bivariate tests revealed that MHSU was quite different across respondents by age at marriage, place of residence, wealth status, media exposure and distance to facilities. The women married at age 18 and above (72.1%, $p < 0.001$), had 2–4 children ($p < 0.001$) and were residing in urban areas ($p < 0.001$) were more likely to have received recommended ANC+4 visits. Women belonging to low wealth quantiles than high wealth quantiles were less likely to receive recommended ANC+4 visits (9.8%–31.0%, $p < 0.001$). Moreover, the majority of women with greater

exposure to media (71.1%), who had visited health facilities in the last 12 months (86.3%), women who did not find distance to health facilities a problem (62.2%) and had self-autonomy of making decisions to visit health facility, were more likely to receive recommended ANC+4 visits. Similar observations were recorded for facility-based delivery and postnatal care services utilisation. Additionally, postnatal care utilisation was significantly associated with women's employment status, although a large proportion of unemployed women had used postnatal care services (85%, $p < 0.001$).

Entitlement to health insurance coverage and social safety net among women also differed across socio-demographics. For example, the likelihood of health insurance enrolment was lower among women married before the age of 18 years compared with women married after 18 years of age (28.3%). Health insurance enrolment was higher among women with higher education level (43.45%), and the richer and richest on the wealth index, 21.7% and 27.6%, respectively. Additionally, more than two-thirds (77.0%) of women who were not working had greater likelihood of health insurance enrolment compared with 23.0% of women who were working. Health insurance enrolment was slightly higher among urban women compared with women residing in rural areas, but the finding was not significantly different.

Lastly, the access to social safety net was higher among women married at age < 18 years (54.2%, $p < 0.001$). The majority of women receiving social safety net were from rural population compared with their counterparts (69.4% vs 30.6%, $p < 0.001$). Similarly, the majority of respondents receiving social safety net had less media exposure in terms of watching TV compared

**Figure 1** Types of maternal healthcare services utilisation covered by health insurance and safety net.

with their counterparts (62.5% vs 37.5%, $p < 0.001$). We also observed the highest percentage of social safety net among women of the lowest and lower quintiles (69.4% vs 30.6%, $p < 0.001$), respectively. More than half (58.1%) of women with social safety net found distance to health facilities as difficult. In addition, majority women with social safety net had >4 children (61.8%). Online supplemental table 1 shows the distribution of respondents' MHSU, health insurance and safety net across sociodemographic characteristics.

Association between MHSU with health insurance coverage

Univariate analysis

Our unadjusted model (model 0) indicated that mothers were twice as likely to access a wider set of maternal health services when were covered with health insurance compared with those without health insurance coverage (OR 2.51, 95% CI 1.29 to 4.87, $p < 0.007$). In contrast mothers who received unconditional cash transfer compared with non-receiving mothers were less likely of attending maternal health services (OR 0.63, 95% CI 0.40 to 0.98, $p < 0.045$).

All the significant variables in the binary logistic regression were entered into multivariate logistic regression analysis. When adjusted for possible confounders in the logistic regression models, health insurance was found positively associated with MHSU (model 1), however, no significant association was found between social safety net and MHSU (model 2).

Multivariate analysis

According to multivariate logistic regression, we found that mothers remained twice more likely to access maternal health services when they were covered by health insurance (adjusted OR (AOR) 2.61, 95% CI 1.19 to 5.74, $p < 0.017$) compared with those without health insurance after adjusting for respondent's age at marriage, education, watching TV visited health facility in last 12 months, distance to health facility, parity and wealth index in model 1. Regarding educational status, the odds of MHSU were 1.38 (AOR 1.38; 95% CI 1.34 to 2.85, $p < 0.001$) and 1.96 (AOR 1.96; 95% CI 1.34 to 2.85, $p = 0.001$) times higher among women with health insurance who attended primary and higher education, respectively, parallel to non-educated one. Women were more likely to access maternal health services when had exposure to mass media (AOR 1.58; 95% CI 1.29 to 1.86, $p < 0.001$) compared with its counterparts. Also, the odds of MHSU were 1.91 (AOR 1.33; 95% CI 1.02 to 1.73, $p < 0.031$) and 1.79 (AOR 1.79; 95% CI 1.36 to 2.35, $p < 0.001$) times higher in women who had visited health facility in the last 12 months and did not find the distance to health facilities as a problem, respectively. The mothers with of 2–4 children and above 4 children compared with mothers with single child had lower odds of MHSU 59% (AOR 0.59; 95% CI 0.47 to 0.75, $p < 0.001$) and 44% (AOR 0.44; 95% CI 0.41 to 0.62, $p < 0.001$), respectively. Similarly, mothers living in rural areas were less likely to access

maternal health services compared with living in urban areas (AOR 0.71; 95% CI 0.54 to 0.94, $p < 0.017$).

There were no significant differences in MHSU between those mothers receiving the unconditional cash transfers versus non-receiving mothers in adjusted analyses (model 2) when adjusted for respondent's age, education, watching TV, whether visited health facility last 12 months, distance to health facility, parity and wealth index in model 2 (table 2).

DISCUSSION

In this paper, we examined secondary quantitative data from PDHS 2017–2018 on the coverage of health insurance and social safety net along with focusing on the key factors that impact MHSU among married women of reproductive age.

We found that the overall prevalence of health insurance coverage was low at 2% while attendance of ANC+4, facility-based delivery and postnatal care was 48.5%, 65.9% and 22.6%, respectively, among pregnant women. Cheema *et al* also have revealed overall low utilisation of large microhealth insurance programmes in Pakistan.¹⁹ Nevertheless, the less coverage of health insurance observed in this study is concerning as it has negative implications on the road towards achieving UHC in Pakistan. While the general prevalence of health insurance availability was low in our population, it impacts significantly positively on MHSU. Our unadjusted model indicated that mothers were twice as likely to access a wider set of maternal health services when they were covered with health insurance compared with those without health insurance coverage. The association remained significant when adjusted for covariates. Global studies have shown similar outcomes,^{13 14 20 21} that have discovered a significant correlation between health insurance coverage and the likelihood of reporting higher attendance at ANC+4, increased use of delivery at a health facility and postnatal care utilisation among mothers. Health insurance programmes might not be sufficient on their own to enhance mothers' health, but they do seem to have made it possible to get high ANC attendance, facility-based care and professional birth assistance.

A significant correlation between household wealth index and maternal education was found with MHSU in our analysis. The results indicated that insured households were generally wealthier; women with the highest wealth indices had a higher likelihood of receiving MHSU services than those with the lowest wealth indices. The finding suggests that among other challenges the poorest women tend to suffer with respect to being able to afford healthcare consequently making them less likely to seek maternal healthcare. Furthermore, education also emerged as a significant contributor towards increased MHSU in our analyses. We found an increased odd of MHSU in women with higher formal education compared with those who had lower and no education. Our study further shows that among women with formal

**Table 2** Univariate and multivariate analysis for the association between health insurance coverage and social safety net with MHSU among women of reproductive age in Pakistan using the 2017–2018 PDHS

Characteristics	MHSU					
	Model 0		Model 1		Model 2	
	cOR (95% CI)	P value	aOR (95% CI)	P value	aOR (95% CI)	P value
Sociodemographics and environmental						
Age at first marriage						
<18	Ref.		Ref.		Ref.	
≥18	1.97 (1.54 to 2.54)	<0.001	1.15 (0.89 to 1.48)	0.261	1.17 (0.91 to 1.50)	0.207
Residence						
Urban	Ref.		Ref.		Ref.	
Rural	0.37 (0.29 to 0.46)	<0.001	0.71 (0.54 to 0.94)	0.017	0.72 (0.55 to 0.94)	0.019
Education level						
No education	Ref.		Ref.		Ref.	
Primary	2.07 (1.54 to 2.78)	<0.001	1.38 (1.03 to 1.86)	0.029	1.41 (1.04 to 1.90)	0.023
Secondary	2.83 (2.06 to 3.89)	<0.001	1.34 (0.96 to 1.87)	0.078	1.34 (0.96 to 1.88)	0.077
Higher	5.72 (4.15 to 7.88)	<0.001	1.96 (1.34 to 2.85)	<0.001	2.01 (1.38 to 2.92)	<0.001
Wealth index						
Poorest	Ref.		Ref.		Ref.	
Poorer	1.27 (0.81 to 2.01)	0.288	0.98 (0.62 to 1.53)	0.936	1.00 (0.65 to 1.55)	0.978
Middle	1.75 (1.04 to 2.93)	0.032	0.93 (0.54 to 1.60)	0.808	0.98 (0.58 to 1.65)	0.953
Richer	3.37 (2.05 to 5.55)	<0.001	1.23 (0.71 to 2.13)	0.456	1.31 (0.77 to 2.23)	0.311
Richest	5.60 (3.45 to 9.07)	<0.001	1.52 (0.83 to 2.76)	0.171	1.60 (0.89 to 2.87)	0.109
Employment status						
Not working	Ref.		–		–	
Working	0.88 (0.66 to 1.18)	0.413				
Reading newspaper/magazine						
No	Ref.		Ref.		Ref.	
Yes	2.31 (1.80 to 2.97)	<0.001	1.11 (0.84 to 1.45)	0.451	1.15 (0.84 to 1.49)	0.438
Listening to radio						
No	Ref.		–		–	
Yes	0.98 (0.67 to 1.42)	0.933				
Watching TV						
No	Ref.		Ref.		Ref.	
Yes	3.08 (2.37 to 4.00)	<0.001	1.58 (1.15 to 2.17)	0.004	1.57 (1.14 to 2.15)	0.005
Maternal						
Visited health facility last 12 months						
No	Ref.		Ref.		Ref.	
Yes	1.99 (1.51 to 2.62)	<0.001	1.79 (1.36 to 2.35)	<0.001	1.78 (1.36 to 2.33)	<0.001
Distance to health facility						
Big problem	Ref.		Ref.		Ref.	
Not a problem	2.18 (1.72 to 2.75)	<0.001	1.33 (1.02 to 1.73)	0.031	1.34 (1.03 to 1.72)	0.028
Decision on respondent's healthcare (n=7632)						
Self/alone	Ref.		Ref.		Ref.	
Jointly	0.84 (0.60 to 1.18)	0.329	0.84 (0.60 to 1.17)	0.324	0.87 (0.61 to 1.17)	0.321
Husband/other	0.49 (0.36 to 0.68)	<0.001	0.62 (0.46 to 0.84)	0.002	0.63 (0.46 to 0.84)	0.002
Parity						

Continued

Table 2 Continued

Characteristics	MHSU					
	Model 0		Model 1		Model 2	
	cOR (95% CI)	P value	aOR (95% CI)	P value	aOR (95% CI)	P value
1	Ref.		Ref.		Ref.	
2–4	0.58 (0.46 to 0.71)	<0.001	0.59 (0.47 to 0.75)	<0.001	0.56 (0.46 to 0.74)	<0.001
>4	0.31 (0.21 to 0.43)	<0.001	0.44 (0.31 to 0.62)	<0.001	0.41 (0.28 to 0.61)	<0.001
Health insurance coverage						
No	Ref.		Ref.			
Yes	2.51 (1.29 to 4.87)	0.007	2.61 (1.19 to 5.74)	0.017	–	
Safety net						
No	Ref.		–		Ref.	
Yes	0.63 (0.40 to 0.98)	0.045			1.55 (0.89 to 2.44)	0.073

Model 0: Univariate analysis.

Model 1: Adjusted for age at first marriage, education, wealth index, environment, media exposure, decision autonomy, parity and health insurance coverage.

Model 2: Adjusted for age at first marriage, education, wealth index, environment, media exposure, decision autonomy, parity and unconditional cash transfer.

aOR, adjusted OR; cOR, crude OR; MHSU, maternal health service utilisation; PDHS, Pakistan Demographic and Health Survey; TV, television.

education; those who had secondary or higher education tend to have a higher likelihood of reporting greater utilisation of maternal health services compared with their counterparts who have attended only primary education. The role of wealth status and education has been substantiated by previous studies^{13 15 22} which found a higher likelihood of the uptake of maternal health services.

Unfortunately, Pakistan's insurance programmes now fall well short of providing adequate population coverage to be self-sustaining. Thus, in order to achieve SDGs targets related to maternal and child health, it is important to evaluate large scale social policies like social support programmes when coverage of health insurance is very low. Benazir Income Support Programme (BISP) is the largest national social safety net programme in Pakistan. The programme provides eligible families with unconditional cash transfers. Making women centred, the BISP significantly contributes to gender equity, women empowerment and promoting financial inclusion in addition to ensuring poverty elimination.²³ This study has brought together evidence of the impact of the social safety net programmes which enable beneficiaries to increase the consumption expenditure which may offset the costs of accessing maternal healthcare. We found that the prevalence of social safety net was relatively larger than health insurance (7.7% vs 2.0%), however, we found no measurable programme impact on MHSU and this is not consistent with findings from other countries. This is plausible that as BISP does not have maternal health as its primary focus, thus the intended impact is insignificant to improve MHSU directly. This lack of social safety net programme claim on MHSU should not be perceived as a failure of the programme in achieving its stated objectives. This

insignificant measurable effect might be because of the poor quality of primary care and other social, geographical and financial barriers that may limit the impact of social safety net on healthcare utilisation among women for maternal health. We find no evidence that women who have greater bargaining power as proxied by cash holdings are better able to leverage resources for use for their healthcare.²⁴ According to the Oxford Policy Management impact evaluation report, the primary use of the BISP cash transfer was on food, with 71% of beneficiaries reporting this, compared to 10% who used it for health related expenses.²³

Analysing the background characteristics revealed several pertinent barriers to health insurance coverage and MHSU. The key barriers are (1) lack of access to electronic media and education; (2) socioeconomic gap and lack of decision-making ability and (3) the long travel required to reach health facility level hampering utilisation. If people are struggling for survival every day, they are less willing to use insurance even if it is done for free as many people cannot even afford medicines or the transport fares. Addressing the socioeconomic gap in insurance ownership is of imminent importance in the country where a substantial proportion of the population lives below poverty line, resides in the rural area and is least capable of accessing healthcare services.

Literature has confirmed that prompting governments to intensify health insurance coverage is a valuable tool for enhancing health outcomes for mothers and children, especially among the underprivileged.^{7 13 15} This study proposes policy implications based on the empirical analysis, such as prioritising health insurance for women between the ages of 15 and 49 years is possibly

the most significant and attainable way forward to boost maternal health services uptake and consequently improve maternal and child health outcomes in Pakistan. Despite the fact that our findings indicate a positive impact of health insurance on several dimensions of maternal healthcare, there are some limitations that must be considered. The primary limitation of this study stems from its reliance on secondary data sources. The survey's content and questions are not what an evaluation of a programme would have asked to investigate the specific research questions of this study. The secondary analysis of the study lacks the insight provided by individuals regarding the most significant obstacles to enrolment in the schemes, the influence of other factors, such as provider type, that could affect both health insurance enrolment and utilisation of maternal healthcare. The cross-sectional nature of PDHS data and the small sample size of insured population used for this study represent another significant limitation. Thus, our results should be viewed as preliminary. However, this analysis provides useful insights into the potential of health insurance to increase access to MHSU. Furthermore, PDHS surveys captured women's insurance status at the time of the survey, which may have differed from their insurance status at the time healthcare was sought. Proper sampling, sound methodology, nationwide coverage, robust analytical tools that make our study replicable and valid are a few of the many strengths of the study. Moreover, the use of demographic health survey provides comparable data to examine health insurance coverage and its association with MHSU makes the findings statistically generalisable. However, caution should be exercised when generalising the results to other settings.

Conclusion

In conclusion, it is essential to emphasise research lessons that can be applied to future evaluations of health insurance and social safety net programmes, as well as their role in enhancing maternal health coverage. Our adjusted estimates of the effects of health insurance on MHSU indicate positive and statistically significant effects. These findings support the case for expanding access to health insurance that provides comprehensive coverage for maternal healthcare services that at least meet the minimum standards recommended. This study's finding of an insignificant association between the social safety net and MHSU opens the door for further research into the role of the social safety net in enhancing the utilisation of maternal healthcare services, as well as the contextual factors that can influence the effectiveness of health insurance policies. Social safety net programmes can be made conditional, subject to regular health checkups for mothers and children to improve maternal and child health outcomes. If the programmes prioritise poverty alleviation without adequately addressing obstacles relating to maternal health, their influence on health service utilisation may be limited. MHSU can be influenced by a range of broader economic and sociopolitical issues. The

potential influence of social safety net programmes may be overshadowed by factors such as economic instability, limited employment prospects or political instability. It is essential to measure supply-side and access issues, to comprehend how they relate to care utilisation and to demonstrate the tangential pathways by which outcomes are realised.

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