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3 # Health insurance acceptance of female labour force: a special focus
4 on reproductive health

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12 ## Abstract
13 **Objective:** To measure the demand for health insurance policy with special focus
14 on maternity services among working women.
15 **Method:** The cross-sectional study was conducted in Lahore, Pakistan, from
16 October 15 to November 15, 2018, after approval from the Punjab Economic Research
17 Institute, and comprised public and private school teachers of reproductive age. The
18 primary data was collected using a structured questionnaire. Logit model was
19 used to determine the factors affecting the interest level in maternal health
20 insurance.
21 **Results:** Of the 110 teachers, 54 (49 %) were from private schools and 56 (51%)
22 from public schools. The overall age range was 21-49 years, with 64 (58%) aged
23 31-40 years. Also, 79 (72%) teachers had completed 16 years of education. Of
24 the total, 63 (57%) respondents were willing to buy maternal health insurance.
25 Income, age, awareness and the type of preceding delivery were important
26 determinants of the willingness to pay for maternal health insurance.

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27 **Conclusion:** Providing full insurance coverage during maternity was expected to
28 give financial relief and to also ensure better health conditions of the teachers on
29 re-joining the work.

30 **Key Words**: Maternal health insurance, Female teachers, Logistic regression,
31 Willingness to pay.

32

33 Introduction

34 Illness and disease can befall anyone irrespective of gender, but it is observed that
35 women planning a family are more at risk due to various antenatal and postnatal
36 health uncertainties and issues. To counter the unpredictability of health, it is
37 important to have a certain mitigation or risk management plan that would not
38 only help in reducing the unforeseen costs, but would also prevent and minimise
39 the damages or losses incurred in case of a health crisis. In such a scenario, health
40 insurance can be beneficial as a risk management tool as a comprehensive
41 maternal health insurance can protect women against health hazards at a crucial
42 stage of life.

43 As more females are entering the labour market, their awareness regarding health
44 issues is also increasing and consequently the demand for health facilities is
45 rising. Recent trends show that labour-force participation rate of women in
46 Punjab is almost one-third to the male labour force participation rate (1). Working
47 women usually prefer to opt for private hospitals due to the high-quality health
48 and maternity services. The Punjab Health Survey 2016 indicated that about 47
49 percent deliveries are facilitated in private health facilities compared to 26 percent
50 in public facility. The usage of private-sector clinics and hospitals has also
51 increased over the years (2). There is a heavy reliance on private-sector medical
52 facilities in Punjab and childbirth in a private hospital has become quite
53 expensive. The out-of-pocket expenditure is very high (3). This high dependence
54 on out-of-pocket payments results in reduction of financial resources of the

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55 households and there is also growing evidence that high number of women facing
56 healthcare debt have faced issues in payment for the medical bills incurred (4).
57 The maternal mortality rate (MMR) in Pakistan for 2015 was significantly high
58 at 178 per 100,000 live births (5). According to the World Health Organisation
59 (WHO), every country should make effort to bring an end to preventable maternal
60 mortalities and achieve the universal MMR of 70 deaths per 100,000 live births
61 by 2030 (6). Accomplishing this goal in Pakistan would not be possible without
62 strategic and appropriate health interventions which would provide access to
63 skilled maternal care and, most importantly, a financial plan for such
64 interventions (7).
65 In Pakistan, there has been significant focus on policy interventions to improve
66 mother and child healthcare, but little attention has been given to the benefits that
67 health insurance can bring to the women who fall in the low-income category of
68 employees. Moreover, research related to health insurance in Punjab with
69 particular focus on women planning a family is scarce. Of the total 910,461
70 school teachers in Punjab, 649,575 are female teachers (8). Despite such a high
71 number of female teachers, their salary packages are inadequate to meet their
72 household expenditures (9). With such budget constraints, maternal health may
73 be overlooked and not given priority compared to other immediate expenditures.
74 As females form a very high percentage of the education sector workforce, it is
75 pertinent to analyse how different structural factors, such as income or availability
76 of maternal health insurance, may impact their healthcare decisions so that a
77 wider picture regarding maternal health insurance can be drawn.
78 While analysing the important determinants which affect women's use of
79 maternal healthcare services in Turkey, health insurance coverage was found to
80 be an important factor in using healthcare services considered vital to reduce
81 infant, child and maternal mortality rates (10). According to several studies, it has
82 been established that in various low- and middle-income countries (LMICs), such

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83 as Cambodia, Indonesia, Ghana and Rwanda, health insurance coverage
84 increased the usage of maternal healthcare services (11).
85 The significance of maternal health insurance can also be gauged from the
86 improvement in various maternal health indicators in Ghana where it has been
87 reported that the insured women compared to the uninsured ones had
88 considerably fewer birth complications (1.4 percent vs 7.5 percent); had mostly
89 used skilled care during pregnancy (65 percent vs 47 percent); had higher rates of
90 births at a health facility (75 percent vs 53 percent); and had a minimum of three
91 prenatal check-ups (86 percent vs 72 percent) (12). In Bangladesh, it was
92 witnessed that women in areas that were provided health insurance had higher
93 rates of availing the antenatal and postnatal care along with higher number of
94 births in a health facility (13).
95 In order to reduce out-of-pocket expenditure, health insurance is a very effective
96 tool for health and financial management. Health insurance not only reduces the
97 severity of unpredictable payments, but also increases utilisation of healthcare
98 facilities and the overall health-seeking behaviour (14). Research has established
99 that there is unequal distribution of health insurance coverage and not in line with
100 socio-economic and employment data (15).
101 The current study was planned to measure the demand for health insurance policy
102 with special focus on maternity services among female teachers.
103

104 **Subjects and Methods**

105 The cross-sectional study was conducted in Lahore, Pakistan, from October 15 to
106 November 15, 2018, and comprised public and private school female teachers aged 21-
107 49 years. After approval from the ethics review committee of the Punjab Economic
108 Research Institute (PERI), the sample size was calculated using the formula (16) :

109 110

$$n = \frac{N Z2 V2}{Nd2+Z2V2}$$

111 Where, n = sample size of the study; N = Total target population; Z =
112 Normal variate at 95 percent precision level; d = Acceptable error 10

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113 percent; V = Guessed variability among sampling units 0.50.
114 The sample was raised from among teachers at randomly selected private and
115 public schools from different geographical locations of Lahore district based on
116 scientific sampling methodology. There were 3784 schools in the private sector
117 and 597 in the public sector. The estimated number of female teachers in public
118 and private girls' schools was around 10,000 each and equal proportional sample
119 was targeted. The data of schools was directly obtained from the respective office
120 of the school education department.
121 After taking consent, the respondents were interviewed in their respective
122 schools. Data was collected using a pretested questionnaire. The draft
123 questionnaire was first tested under realistic conditions to determine its suitability
124 for eliciting the requisite information. The questionnaire was further modified in
125 the light of the pre-testing. The data was analysed using descriptive statistics.
126 Logistic regression was used in order to estimate the results. The categorical
127 variable 'Interest of the working women for health insurance' (INT) was taken as
128 the dependent variable the value of which was "1" if the respondent was
129 interested in getting health insurance scheme, and "0" if the respondent was not
130 interested (17). The independent variables were the age of the respondent (AGE),
131 respondent's income level (RINC), awareness of the maternity health insurance
132 (AWRNS) and delivery type (DTYPE). The general form of the model was
133 $INT = f(AGE, RINC, AWRNS, DTYPE)$. The results were reported in odds
134 ratios (Ors), and any value >1 showed positive change regarding the interest of
135 the respondent.
136
137 **Results**
138 Of the 110 teachers, 54 (49.09%) were from private schools and 56 (50.91%)
139 from public schools. The overall age range was 21-49 years, with 63 (58.18%)
140 aged 31-40 years. Also, 79 (71.82%) teachers had completed 16 years of
141 education 63 (57.27%) belonged to upper middle-income group 65 (59.27%)

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142 were interested in maternal health coverage; and the amount the women were
143 willing to pay ranged from Pak Rupee (PKR) 200 to PKR 2,000 per month (Table
144 1).
145 The logistic model indicated that increase in respondent's income and age
146 reduced their interest of accepting the health insurance policy while awareness of
147 the respondents about health insurance policy, and the preceding delivery being
148 a Caesarean Section (CS) indicated more interested in having health insurance
149 policy to meet the expenditures Even though CS was not statistically significant
150 (Table 2).
151

152 **Discussion**

153 The findings indicated that the coverage of health insurance was low, with only
154 one out of eight respondents ever having had a health insurance policy and only
155 one-third of the women having awareness about maternal health insurance. This
156 lack of knowledge acts as a hindrance to subscription (18). A study found a strong
157 link between education and maternal healthcare. Our sample comprised
158 educationally advantageous women, but surprisingly their knowledge regarding
159 maternal health insurance was considerably low.
160 The negative association of income with interest in maternal health insurance
161 showed how increase in income made it easier for women to make out-of-pocket
162 expenditures on delivery and other maternal health expenses. This implies that
163 women in low income groups would need maternal health coverage to address
164 financial barriers that limit access to healthcare (19). To meet demand of maternal
165 health services of women in lower income bracket, it is, therefore, essential that
166 they are provided such services on low premiums (20). This might strengthen
167 connection of lower income women with better health coverage and health
168 systems (21).
169 Empirical literature on the relationship between age and maternal health
170 insurance provides mixed evidence. For instance, studies in India and Honduras

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171 found the proportion of women obtaining maternal health services reduced as age
172 increased.
173 A study (22) found strong association between the age of the respondents and
174 their willingness to pay for health insurance, while another study found no
175 association between age and maternal health-seeking behaviour (23). The current
176 results suggest that as age of the women increased, their interest in obtaining
177 maternal health insurance declined. This can be attributed to the fact that with an
178 increase in age, probability of bearing a child decline. Moreover, since our
179 sample only had teachers who were employed, an increase in age can also be
180 interpreted as an increase in experience. Greater experience is associated with
181 higher incomes that may enable women to make such catastrophic out-of-pocket
182 expenditures. The findings of the current study are in contrast to what has been
183 reported by an earlier study (20) which indicated that older women had higher
184 utilisation of maternal health services, and adhered to the recommendation of at
185 least four antenatal care (ANC) visits compared to the youngest age group which had
186 people aged 15–19 years.
187 In the light of the findings, the current study recommends that policy-makers
188 should look into the possibility of separate health insurance schemes for female
189 educators as a means to have a healthier female teacher population and,
190 resultantly, a more motivated teacher workforce. This area can be explored solely
191 by the health department or in collaboration with the education department. The
192 possibility of private-sector investment in this crucial area can also be explored.
193

194 **Conclusion**

195 Providing full insurance coverage during maternity was expected to give financial
196 relief and to also ensure better health conditions of the teachers on re-joining the
197 work.
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265
266 **Table 1: Demographic Characteristics (n = 110)**

Items	Frequency (Percentage)
Age of the Respondents (Years)	
≤ 30	42 (39.09%)
31-40	63 (58.18%)
40-49	5 (02.73%)
Education (Complete Years of Schooling)	
≤ 14	1 (00.91%)
14	18 (16.36%)
16	79 (71.82%)
18	12 (10.91%)
School Type	
Private	54 (49.09%)
Public	56 (50.91%)
Family Income (PKR)	
≤ 25000	3 (03.00%)
26000-50000	26 (23.65%)
51000-100,000	63 (57.27%)
>100,000	18 (16.36%)
No. of Children of the Respondent	
0	16 (14.6%)
1-2	71 (64.5%)
3-4	23 (20.9%)
Delivery Type	
C-section	69 (62.4%)

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Normal Delivery	41 (37.6%)
Total Expenditures Incurred on Delivery of Last Child (PKR)	
≤ 10000	11 (10.13%)
10000-50000	54 (49.03%)
50000-100,000	32 (29.03%)
>100,000	13 (11.81%)
Interested in Purchasing Maternal Healthcare Insurance	
Yes	65 (59.27%)
No	45 (40.73%)
Willingness to pay (Premium for Maternal Health Insurance in PKR)	
Minimum	200
Maximum	2000

267 Source: Authors' calculations

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270

271 **Table 2: Logistic Regression.**

Variable	Odds Ratio	Std. Err.	Z	P>z
Income of Respondent	0.99	0.00	-1.76	0.07
Age of Respondent	0.88	0.05	-2.15	0.03
Awareness of Maternal Health Insurance	1.87	0.92	1.28	0.20
Type of Delivery	1.64	0.77	1.07	0.28
Constant	63.6	129.70	2.04	0.04

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