



# BMJ Open Impact of microfinance health interventions on health-related outcomes among female informal workers in Pakistan: a retrospective quasi-experimental study

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## ABSTRACT

**Objective** The purpose of this study is to assess the impact of microfinance health interventions (health insurance and health-awareness programmes) on health-related outcomes among female informal workers in Pakistan.

**Design** We conducted a retrospective, quasi-experimental study among a total of 442 female borrowers from seven microfinance providers (MFPs) across four provinces of Pakistan in 2018. A standardised tool was used for data collection. Probit regression was used to identify the probability of female borrowers gaining improvements in health outcomes based on their sociodemographic characteristics. Propensity score matching (PSM) was used to assess the overall impact of health interventions.

**Primary outcome measures** Four health-related outcomes reported by the women were used: perception of good health overall, ability to visit a general practitioner, ability to purchase prescribed medicine and intake of multivitamins.

**Results** We found that women receiving health interventions had a greater probability of better health outcomes when they were from Punjab province, borrowing in groups and attending monthly meetings at MFPs. Even with a small loan amount, all four health-related outcomes were significantly associated with receiving health insurance and health-awareness programmes. PSM results show a greater likelihood of overall perceived good health (nearest neighbour matching (NNM) =17.4%; kernel matching (KM) =11.8%) when health insurance is provided and a significant improvement in the ability to purchase prescribed medicine when a health-awareness programme is provided (NNM=10.1%; KM=11.7%).

**Conclusion** Health and social policies are vital to secure health and well-being among poor women working in the informal sector. Targeting improved equity across female population groups for health interventions will in the long run improve poor women's health, income-earning abilities and capacity expansion for small businesses.

## Strengths and limitations of this study

- This study uses a nationally representative sample of 442 female borrowers of microfinance from four provinces in Pakistan.
- It is the first study which focuses on female microfinance borrowers in Pakistan to assess the impact of health interventions on health-related outcomes among poor women.
- We were able to identify health improvements when women received health insurance and health-awareness programmes.
- Due to the cross-sectional study design and quasi-experimental analysis framework, the results must be interpreted with caution.
- Future studies need to consider additional burdens of loan repayment and small-business investment.

## INTRODUCTION

More than half (57%) of the female population of Pakistan is illiterate. Less than a quarter (23%) of women are employed, with a majority working in the informal sector.<sup>1</sup> Informal workers in Pakistan are usually self-employed or involved in small-scale work. They are not protected by the country's labour laws and regulations. Therefore, they do not receive employment benefits like a permanent contract, minimum wage, medical allowances, a pension or provident fund. There are several problems to consider with regard to the health of female informal workers in Pakistan, including high rates of poverty and low health literacy, as well as inadequate access to public health services,<sup>2</sup> reinforced by low government health budget allocations for this population group.<sup>3</sup> In addition to the overall absence of universal health coverage, there is limited coverage for public health emergencies like



pandemics<sup>4</sup> and greater risks of acquiring infectious diseases among female informal workers due to mostly unsanitary living conditions in disadvantaged communities.<sup>5</sup> Pakistan has one of the largest out-of-pocket healthcare expenditures globally, at an overwhelming proportion of 90%.<sup>6</sup> Although health insurance can become an important support system for buffering the poor against out-of-pocket payments, so far it covers only 1% of health expenditure in the country.<sup>2</sup> This is because health insurance is mainly used by richer and urban populations.

The efficacy and limitations of private providers of health interventions in Pakistan are not clear. One of the few private providers offering health interventions to women employed in the informal sector are microfinance providers (MFPs) (including banks, institutes and non-governmental organisations (NGOs)).<sup>7</sup> MFPs are mainly operational in underdeveloped communities, providing loans to the poorest women for small-business development.<sup>8</sup> There are 50 MFPs operating in Pakistan, with nearly 40 reporting some form of health intervention for clients, including health insurance and health-awareness programmes.<sup>9</sup> The MFPs are regulated either by the State Bank of Pakistan or the Securities Exchange Commission of Pakistan. An inherent function of the original model of microfinance was to catalyse wider social development for women, including improved health behaviour and, therefore, better health-related outcomes.<sup>10</sup> It is in the interests of MFPs to couple health interventions with loan services because healthy clients are more likely to repay loans and run successful businesses.<sup>11</sup>

The role of microfinance health interventions is critical in countries like Pakistan, where poverty is high and out-of-pocket payments are not possible for impoverished families. Additionally, the public sector does not have a dependable service structure for complete or quality healthcare and universal financial protection for health coverage is absent.<sup>4</sup> More than two million poor women are loan takers of microfinance in the country.<sup>12</sup> As poor populations do not have the money to take out traditional health insurance, microfinancing for health insurance becomes the only option for them. However, small health insurance schemes have been severely criticised for their minimal impact on clients' lives due to their minimal coverage and the large burden of disease faced by poor populations.<sup>13</sup> Evidence also suggests that poor populations holding minimal health insurance, in the event of sustaining large healthcare costs, may resort to damaging practices such as reducing household nutrition, removing children from school and taking out more loans.<sup>14</sup> During the most recent times of the coronavirus pandemic, debt-ridden poor women attempting to repay loans are facing even more challenges in generating income from small businesses due to social isolation and lockdown.<sup>15</sup> Therefore, health security is a major concern among female borrowers and there is a need to improve research and policy in order to financially protect poor women and improve their health literacy.<sup>16</sup>

## Aims of the study

To the best of our knowledge, there are no studies that have used female microfinance borrowers as a sample to assess the impact of health interventions on health-related outcomes among poor women.<sup>17</sup> Our objective for this study was to use a sample of female microfinance borrowers, who are availing themselves of health insurance from a private provider, to help identify suitable policies for disease prevention and health promotion in Pakistan. The following research questions are addressed in this study: (1) Do female borrowers of microfinance who are provided with health interventions show improved health-related outcomes? and (2) What are the sociodemographic, household and loan portfolio characteristics of female borrowers of microfinance that are associated with improved health-related outcomes?

## METHODS

This study is part of a larger, mixed-methods study on the well-being of female microfinance borrowers. The qualitative part has already been published.<sup>18</sup> The results presented here are based on a cross-sectional survey, in which women who had been borrowers of microfinance for more than 1 year were interviewed using a structured, quantitative questionnaire. We used the framework of a quasi-experimental study to estimate the impact of microfinance health interventions. The data was analysed using SPSS version 25 and STATA 16.

## Sampling

We used a list available on the Pakistan Microfinance Network to contact the 20 MFPs across Pakistan. Seven MFPs agreed to provide permission to interview their clients. The sampling took place in all four provinces of Pakistan (Punjab, Sindh, Balochistan, and Khyber Pakhtunkhwa (KPK)), but not in the two autonomous territories or the federal territory of Islamabad. The sampling frame at the level of individual women took the population weightage of the provinces into account. We were able to contact 500 women randomly, as they visited the MFP offices to make their monthly loan repayment. A final total of 442 women were willing to participate and provided informed written consent, which is a response rate of 88.4%. These women were sampled from seven cities within the four provinces, based on MFP permission and access (Punjab: n=252 (cities: Gujranwala, Lahore, Khanewal, Sheikhpura); Sindh: n=100 (city: Matiari); Balochistan: n=50 (city: Lasbela); KPK: n=40 (city: Abbottabad)). Study participants received financial support from the following types of MFPs: four microfinance banks (n=340), one microfinance institute (n=41), one government microfinance scheme (n=50) and one Islamic microfinance organisation (n=11).

Information related to the services provided by the sampled MFPs in this study is presented in [table 1](#). None of the MFPs provide mandatory health insurance schemes. Neither the government scheme nor the Islamic

**Table 1** Health insurance schemes of microfinance providers (MFPs) sampled in this study

	Microfinance bank (n=340)	Microfinance institute (n=41)	Government scheme (n=50)	Islamic finance (n=11)
Coverage	Female borrower and any family member	Female borrower and spouse	–	–
Term	One year	One year	–	–
Premium	PKR490–PKR990 per family member	PKR1200 (if unmarried); PKR1850 (if married)	–	–
Insurance	Only hospitalisation (PKR2000–PKR4000 daily)	Only hospitalisation PKR30 000 (one-off payment)	–	–
Limit	Between 10 and 30 days	One-off payment	–	–
Life insurance	PKR25 000–PKR50 000 in case of death	–	–	–
Other			Option to take government Sehat Sahulat Programme	Health clinic in Lahore only; treating patients with diabetes and heart disease

Information in this table is based on data from MFPs sampled in this study.

finance provider were offering health insurance, but they were providing health-awareness interventions. The government scheme offered a separate health insurance scheme (called the Sehat Sahulat Programme), but none of the study participants was enrolled in this scheme. Women borrowing from banks have the option to take out health insurance for themselves and any family members. They have to pay a premium ranging from PKR490–PKR990 (US\$3.00–US\$6.08) (all PKR to USD conversions in this study have been done at the rate of 1 USD=162.805 PKR.) per person and are insured only in the event of hospital admission. However, the insurance does not cover hospital costs but instead pays the client the amount of daily wages lost, ranging from PKR2000–PKR4000 (US\$12.28–US\$24.56) daily. The scheme also covers a one-off payment in the event of death, ranging from PKR25 000–PKR50 000 (US\$153.55–US\$307.10). Female borrowers from the microfinance institute are only covered for themselves and their spouse. They have to pay a premium of PKR1200 (US\$7.37) if unmarried or PKR1850 (US\$11.36) if married. Clients are provided with a one-off payment of PKR30 000 (US\$184.25) in the event of hospitalisation.

### Data collection

Data collection took place between February and November 2018. Each city had one research team leader and two assistants in the data collection team, comprising a total of 21 people undertaking data collection. The assistants were all MPhil graduates who had experience of field research and were hired through the assistance of the universities in each city. Training of the data collection team took place over a 2-week period and was conducted either in person or through video calls. Data collection took place in face-to-face interviews in a private space at the MFP premises, in order to preserve

the women's privacy due to the personal nature of the questions. The structured surveys were completed on behalf of the female respondents with the assistance of the trained research team. During pilot testing, we used both a self-administered and researcher-administered approach, and found that the latter showed lower rates of non-response. This could be due to the length of the questionnaire and the low literacy rate among the interviewed women. Although the questionnaire was translated into Urdu, women having less than 8 years of schooling required assistance to read and fill in the questionnaire.

### Measures

A structured interview schedule was used for data collection (online supplemental file 1). Questions in this tool were taken from instruments used in various studies, such as the Women's Healthcare Experiences Survey,<sup>19</sup> the Baseline Nutrition and Food Security Survey developed by UNICEF,<sup>20</sup> the WHO Multi-Country Study on Women's Health and Domestic Violence against Women,<sup>21</sup> and the WHO Survey on Workplace Violence.<sup>22</sup>

#### Dependent variables: health outcomes

This study assesses the association of health interventions offered by MFPs with four dependent health-related outcome variables: (1) women perceive health to be good overall, (2) women visited a general practitioner in the last year, (3) women had the ability to purchase prescribed medicine in the last year and (4) women's intake of multivitamins has improved in the last year. The four dependent variables were categorised as binominal and coded as either 'yes' (1) or 'no' (0).

#### Independent variables: sociodemographic and loan characteristics

Several sociodemographic variables, such as age (0=less than 30 years; 1=30 years and older), religion (0=Muslim;

1=other than Muslim), literacy of the female borrower (0=illiterate; 1=literate), literacy of the spouse (0=illiterate; 1=literate), house ownership (0=yes; 1=no) and number of dependent children living in the house (0=none; 1=one or more) were assessed as confounding variables. It is necessary to control for these variables because they have an impact on each of the dependent variables mentioned above. Province is also controlled because the region is a proxy for sociocultural norms that would impact on how women perceive their health and whether they are able to visit a general practitioner or purchase medicine (0=other than Punjab [(Sindh, Balochistan or KPK); 1=Punjab]).

The other set of variables is related to MFP services, such as: loan amount (0=PKR10 000–20 000; 1=PKR21 000 or more), monthly meetings (0=no; 1=yes), interest rate, which is the amount charged on top of the principal by a lender to a borrower (0=2.5%–10%; 1=11% or more), group loan, meaning that a group of customers are willing to guarantee each other for the repayment of the loan (0=no; 1=yes), and debt age (0=1–2 years; 1=3 or more years). These have been included because they assess the impact of the provision of non-financial services on each of the dependent variables.

#### Independent variables: health intervention

The three independent variables for microfinance health intervention are: (1) receiving health insurance, (2) attended at least one health workshop and (3) received health-related talks by loan officers. The two independent variables of health workshop and health-related talks by loan officers were compounded to make one variable indicating whether the women had attended a health-awareness programme (0=no; 1=yes). In this way, the control group for the study (T=0) consists of female borrowers who lack the provision of a health intervention, and the treatment group (T=1) includes female borrowers who are receiving a health intervention.

#### Comparison group

Using a quasi-experimental framework, the study estimates the impact of gaining access to health interventions (health insurance and health-awareness programmes) against the counterfactual of those women who are receiving a loan for small business mobilisation in the absence of health interventions.

#### Probit analysis

The impacts of health insurance and health-awareness programmes provided by the MFP on the four dependent, health-related variables have first been estimated using a probit estimation for the following linear regression equation:

$$Y_i = \beta_0 + \beta_1 T + \beta_2 X_i + \beta_3 Z_i + \beta_4 L_i + \varepsilon_i$$

where  $Y_i$  is the dependent variable measuring the four health-related outcomes.  $T$  is the treatment variable (1 if 'yes', and 0 otherwise) measuring the three microfinance health interventions.  $X_i$  is a set of sociodemographic

characteristics including age, religion, province and literacy;  $Z_i$  is a set of household characteristics, including house ownership and number of dependent children living in the house;  $L_i$  is a set of loan portfolio characteristics including debt age, group loan, loan amount, interest rate and monthly meetings; and  $\varepsilon_i$  is the error term.

#### Propensity score matching

We used propensity score matching (PSM) to estimate the unobserved counterfactuals and make an impact analysis of health interventions. PSM is a non-parametric statistical method which matches the treated (those receiving the health intervention) and the controlled on the basis of conditional probability of participation, given the observable characteristics.<sup>23</sup> As we only have cross-sectional data, we can compare the dependent variables related to women's health in terms of those who have access to non-financial, health-related services provided by the MFP (in this study called the 'health-awareness programme') and those who do not, as long as these services are randomly distributed and there is no selection bias. The estimation of instrumental variables is one technique that is frequently used within PSM. However, these results are only robust if a valid instrument is being used. As it was not easy to find a valid instrument for our study, we used statistical matching, which has also been widely used before.<sup>24–26</sup>

The study will be using the following functional form:

$$Y_i = \beta_0 + \beta_1 T + \beta_1 X_i + \varepsilon_i$$

where  $Y_i$  is the dependent variable measuring the four health-related outcomes.  $T$  is the treatment variable (1 if 'yes', and 0 otherwise) measuring the microfinance health interventions.  $X_i$  are the covariates used for matching the data, including age, religion, literacy, spouse's literacy, house ownership, access to drinking water, access to gutter drainage, access to toilet facility, children, debt age, group loan, loan amount, interest rate and monthly meetings, and  $\varepsilon_i$  is the error term. These control variables have been used in a large and growing volume of studies.<sup>27</sup>

Our study satisfies the main conditions of PSM, which are: (1) using a rich set of control variables, which are observable characteristics, (2) using the same survey for treated and control groups and (3) having the same community belonging to the treated and control groups.<sup>28</sup> The PSM model constructs a statistical comparison group based on the probability of participating in the treatment  $T$ , conditional on observed characteristics,  $X$ , or the propensity score:

$$p(X) = Pr(T=1|X)$$

where  $T = \{0, 1\}$  is the indicator of exposure to treatment and  $X$  is the multidimensional vector of pretreatment characteristics. Following the estimation of the propensity score, the region for common support is defined as being where distributions of the propensity score for the treatment and comparison group overlap. Observations within the control

and treatment group that lie outside the region for common support are eliminated.<sup>29</sup> As PSM is intended to help in identifying the impact of the health intervention, we used the computation of ‘average treatment effect on the treated’. We used two matching criteria (nearest neighbour matching (NNM) and kernel matching (KM)), to assess statistical significance from different perspectives and to test the robustness of the results.<sup>24</sup> NNM is used to evaluate absolute differences between propensity scores, and KM is used to compare each treated unit to a weighted average of the outcomes of all untreated units.

### Patient and public involvement

This research was conducted without the involvement of the public or patients. However, the views of women from this study have been published elsewhere.<sup>18</sup>

## RESULTS

### Sample characteristics

All the women in our sample earned less than US\$4.82 per day and belonged to the poorest stratum of society. They were taking out loans for small business mobilisation in order to improve their life opportunities. The majority of the women were Muslim, from Punjab and illiterate. About three-quarters had been borrowers for more than 3 years, were attending monthly meetings with loan officers, and were paying interest rates of less than 10%. Out of the 442 female borrowers in the sample, 64.2% (n=284) had taken out health insurance (table 2) and 71.0% (n=314) had participated in a health-awareness programme by attending a health workshop or receiving health talks by loan officers (table 3).

### Determinants of health-related outcomes after the health insurance intervention

Table 4 presents the determinants of health-related outcomes for recipients of health insurance. Overall, perceived good health was significantly associated with group borrowers, small loan amounts and lower interest rates. Improved ability to visit a general practitioner shows a positive correlation with female borrowers from Punjab province, who attending monthly meetings, had a group loan and a smaller loan amount. Women had a significantly improved ability to purchase prescribed medicine when they were from Punjab, took out smaller loans and owned a house. The uptake of multivitamins was increased among women with smaller loans, who owned a house, had been borrowers for no longer than 2 years, and were attending monthly meetings. Therefore, only a small loan amount was a significant determinant in all four health-related outcomes among recipients of health insurance.

### Determinants of health-related outcomes after the health-awareness intervention

In table 5, the determinants for all four health-related outcomes among recipients of a health-awareness programme are presented. Women with the following characteristics have a greater probability of overall

perceived good health: group borrowers, smaller loans, lower interest rates, younger women and those with literate spouses. The ability to visit a general practitioner for regular check-ups during the previous year was higher among women from Punjab province, with smaller loans, attending monthly meetings, above 29 years of age and who were non-Muslim. Similarly, women from Punjab province, having smaller loans, owning their house and younger women had a higher probability of improved ability to purchase prescribed medicine. The probability of increased uptake of multivitamins was greater in women who took out smaller loans, had not been in debt for more than 2 years, were group borrowers and who attended monthly meetings. The only variable that was significantly associated with all four health-related outcomes among recipients of a health-awareness programme was the small loan amount.

### Balancing covariates and common support diagnostics

(a) Figure 1A exhibits the kernel density graphs for the propensity score of treated and control groups before matching, while figure 1B exhibits it after matching. It can be clearly seen that the kernel densities are significantly overlapping in the latter, indicating that the treatment and control groups have a comparable propensity score as estimated using the covariates. A similar comparison of treatment and control groups can be observed in figure 2A and B using histograms.

Figure 3A and B exhibits the common support between the control and treatment groups. While in figure 3A, we can see that certain observations in the treated group are not matched, in figure 3B all the observations in the treated and control groups are successfully matched.

The balancing of covariates can also be observed using standardised mean difference and ratio of variances. Table 6 gives the standardised mean difference and ratio of variances for the control and treatment groups before and after matching. It can be observed that the standardised mean difference in the matched sample is much improved and close to zero for all covariates. The ratio of variances is approximately equal to one in the matched sample for all covariates except monthly meetings. Using these diagnostics, we can infer that the sample has matched well using PSM.

### Impact of the interventions on health-related outcomes

The descriptive statistics for comparison between control and treatment group for health insurance (online supplemental table 1) and the health-awareness programme (online supplemental table 2), before and after matching, depict the elimination of imbalance with respect to almost all covariates before and after matching. Table 7 shows that women receiving health insurance had a significantly greater chance of overall perceived good health. According to NNM, 17.4% of women with health insurance had a greater likelihood of overall perceived good health; the results for KM showed a greater likelihood in 11.8%. Female borrowers receiving a health-awareness

**Table 2** Descriptive statistics of women borrowers with regard to health insurance

Variable	Not receiving health insurance n (%) (n=158)	Receiving health insurance n (%) (n=284)	$\chi^2$ test
Age			0.557
<29 years	86 (54.4%)	165 (58.1%)	
≥30 years	72 (45.6%)	119 (41.9%)	
Religion			0.740
Muslim	137 (86.7%)	254 (89.4%)	
Other	21 (13.3%)	30 (10.6%)	
Province			37.977*
Punjab	62 (39.2%)	197 (69.4%)	
Other	96 (60.8%)	87 (30.6%)	
Literacy			3.770†
Illiterate	94 (59.5%)	195 (68.7%)	
Literate	64 (40.5%)	89 (31.3%)	
Spouse literacy			7.135†
Illiterate	86 (54.4%)	191 (67.3%)	
Literate	72 (45.6%)	93 (32.7%)	
House ownership			9.583†
Other	104 (65.8%)	225 (79.2%)	
Owned	54 (34.2%)	59 (20.8%)	
Children			1.907
None	54 (34.2%)	116 (40.8%)	
One or more	104 (65.8%)	168 (59.2%)	
Debt age			15.755*
1–2 years	71 (44.9%)	75 (26.4%)	
≥3 years	87 (55.1%)	209 (73.6%)	
Group loan			0.102
No	91 (57.6%)	168 (59.2%)	
Yes	67 (42.4%)	116 (40.8%)	
Loan amount			25.096*
PKR10 000–PKR20 000 (US\$61.42–US\$122.84)	31 (19.6%)	123 (43.3%)	
PKR21 000–PKR100 000 (US\$129.45–US\$616.41)	127 (80.4%)	161 (56.7%)	
Interest rate			1.044
2.5%–10%	105 (66.5%)	202 (71.7%)	
≥11%	53 (33.5%)	82 (28.9%)	
Monthly meeting			0.091
No	41 (25.9%)	70 (24.6%)	
Yes	117 (74.1%)	214 (75.4%)	
Overall perceived good health			5.545†
No	120 (75.9%)	185 (65.1%)	
Yes	38 (24.1%)	99 (34.9%)	
Improved ability to visit general practitioner			0.065
No	67 (42.4%)	124 (43.7%)	
Yes	91 (57.6%)	160 (56.3%)	

Continued

Table 2 Continued

Variable	Not receiving health insurance n (%) (n=158)	Receiving health insurance n (%) (n=284)	$\chi^2$ test
Improved ability to purchase prescribed medicine			19.127*
No	118 (74.7%)	152 (53.5%)	
Yes	40 (25.3%)	132 (46.5%)	
Improved intake of multivitamins			6.6040†
No	120 (75.9%)	182 (64.1%)	
Yes	38 (24.1%)	102 (35.9%)	

\*Significant at 1% level.

†Significant at 5% level.

‡Significant at 10% level.

programme from the MFP in the form of a health workshop or health talk by the loan officer show a significant improvement in their ability to purchase prescribed medicine (NNM=10.1%; KM=11.7%). For the other two outcomes, neither of the interventions showed a significant effect.

## DISCUSSION

In the absence of universal health coverage or compulsory educational enrolment, poor and predominantly illiterate female informal workers and borrowers of microfinance are dependent on MFP for receiving health coverage and promoting health. This study has measured four health-related outcomes in female borrowers. The results show that there is inequity in the uptake of health insurance and health-related outcomes.

Women from Punjab have better health-related outcomes compared with women from Sindh, Balochistan and KPK. National health surveys of Pakistan also report that Punjab has better health-related outcomes compared with other provinces, because the provincial government of Punjab has a greater budget allocation for running health-awareness campaigns.<sup>30</sup> The fact that our results show that older women and non-Muslim women have a greater likelihood of improved ability to visit a general practitioner after receiving a health-awareness intervention indicates that younger Muslim women face barriers to healthcare access due to regressive norms.<sup>31</sup> Muslim families are known to prevent fertile women from accessing healthcare in an attempt to control their reproductive choices and health options. Our results align with other research, which suggests that Muslims suffer from health disparities due to religious fallacies.<sup>32</sup>

Conversely, younger women show better overall perceived health and ability to purchase prescribed medicine. This may be because at a younger age fewer health issues occur, and also because of greater state and NGO efforts directed towards maternal healthcare.<sup>33</sup> Our results confirm that women under the age of 29 years receive privileged support in a patriarchal society during their prime childbearing years to consume maternal

health-related medication.<sup>34</sup> Women with literate spouses also show improvements in overall general health after receiving health insurance. This may be because spouse literacy has a direct effect on women's improved health-care behaviour and mental health.<sup>35</sup>

Women who take out their loan in groups show better health-related outcomes compared with women who are single borrowers. Our results suggest that women in groups share their healthcare knowledge and encourage each other towards improved healthcare behaviour.<sup>36</sup> Similarly, women who attend monthly meetings with loan officers have better health-related outcomes. The results suggest that caring loan officers are fulfilling an important responsibility in supporting female borrowers to engage in improved health behaviour and health-related outcomes. Given the conservative culture of Pakistan and the disadvantaged backgrounds of these female borrowers, loan-taking women might not be able to use healthcare services due to issues of permission or ignorance.

Women who receive smaller microfinance loans and do not have a long debt age show improved health-related outcomes. The finding that only women who receive smaller loans show significantly better health-related outcomes may be seen as an endogenous result (ie, because individuals who need only a small loan may be better off to start with in terms of health), and difficult to interpret in terms of causality, given the cross-sectional nature of the data. However, we have only sampled women from the poorest stratum, and they have taken out small loans because they are not eligible for bigger loans. Therefore, one can expect that there is no association between health condition at the time of loan taking and the loan amount.

Furthermore, the finding related to debt age suggests that women with a debt burden over a longer period of time may be suffering from debt fatigue, which is converting to declining health-related outcomes.<sup>37</sup> Women and their families who own their houses also have better health-related outcomes, specifically related to the ability to visit general practitioners and improved uptake

**Table 3** Descriptive statistics of women borrowers with regard to health awareness

Variable	Not receiving health awareness n (%) (n=128)	Receiving health awareness n (%) (n=314)	$\chi^2$ test
Age			0.077
<29 years	74 (57.8)	177 (56.4)	
≥30 years	54 (42.2)	137 (43.6)	
Religion			0.337
Muslim	115 (89.8)	276 (87.9)	
Other	13 (10.2)	38 (12.1)	
Province			16.372*
Punjab	56 (43.8)	203 (64.6)	
Other	72 (56.3)	111 (35.4)	
Literacy			9.109†
Illiterate	70 (54.7)	219 (69.7)	
Literate	58 (45.3)	95 (30.3)	
Spouse literacy			0.231
Illiterate	78 (60.9)	199 (63.4)	
Literate	50 (39.1)	115 (36.6)	
House ownership			0.03
Other	96 (75.0)	233 (74.2)	
Owned	32 (25.0)	81 (25.8)	
Children			0.002
None	49 (38.3)	121 (38.5)	
One or more	79 (61.7)	193 (61.5)	
Debt age			21.342*
1–2 years	63 (49.2)	83 (26.4)	
≥3 years	65 (50.8)	231 (73.6)	
Group loan			5.480†
No	86 (67.2)	173 (55.1)	
Yes	42 (32.8)	141 (44.9)	
Loan amount			6.515†
PKR 10 000–PKR20 000 (USD \$61.42–US\$122.84)	33 (25.8)	121 (38.5)	
PKR 21 000–PKR1 00 000 (USD \$129.45–US\$616.41)	95 (74.2)	193 (61.5)	
Interest rate			18.527*
2.5%–10%	70 (54.7)	237 (75.5)	
≥11%	58 (45.3)	77 (24.5)	
Monthly meeting			2.005
No	38 (29.7)	73 (23.2)	
Yes	90 (70.3)	241 (76.8)	
Overall perceived good health			0.023
No	89 (69.5)	216 (68.8)	
Yes	39 (30.5)	98 (31.2)	
Improved ability to visit general practitioner			3.383‡
No	64 (50.0)	127 (40.4)	
Yes	64 (50.0)	187 (59.6)	

Continued



**Table 3** Continued

Variable	Not receiving health awareness n (%) (n=128)	Receiving health awareness n (%) (n=314)	$\chi^2$ test
Improved ability to purchase prescribed medicine			13.073*
No	95 (74.2)	175 (55.7)	
Yes	33 (25.8)	139 (44.3)	
Improved intake of multivitamins			0.015
No	88 (68.8)	214 (68.2)	
Yes	40 (31.3)	100 (31.8)	

\*Significant at 1% level.

†Significant at 5% level.

‡Significant at 10% level.

of multivitamins. The results imply that the provision of health insurance and not having to pay household rents on a monthly basis translates into better health-related outcomes. Impoverished families who have to pay high rents for accommodation are usually employed in multiple jobs and have little time for health and well-being.<sup>38</sup>

The impact of microfinance is only visible on two health-related variables. Although there are no effects on general practitioner visits or uptake of multivitamins, we found that microfinance health insurance has an impact by

creating an improved perception of general health. This shows that being insured is an emotional support and well-being facilitator for poor women. The emotional buttress provided by health insurance can go a long way towards improving perceived well-being, which can translate into a greater commitment to self, family and business development among poor women from disadvantaged backgrounds.<sup>39</sup> In addition, microfinance health-awareness interventions have an impact by improving the purchase of prescribed medicine. Many poor women in Pakistan do

**Table 4** Probit analysis on determinants of health-related outcomes among recipients of health insurance

	Overall perceived good health		Improved ability to visit general practitioner		Improved ability to purchase prescribed medicine		Improved multivitamin uptake	
	Coeff.	Z-score	Coeff.	Z-score	Coeff.	Z-score	Coeff.	Z-score
Age	-0.2588	-1.43	0.2754	1.39	-0.2915	-1.51	0.0703	0.36
Religion	0.4079	1.37	-0.2711	-0.97	0.4165	1.46	-0.0102	-0.03
Province	-0.2676	-1.04	0.9990*	4.05	1.043*	4.21	0.0315	0.12
Literacy	-0.0999	-0.49	0.2018	0.96	0.0828	0.42	0.1994	0.98
Spouse literacy	0.2410	1.18	0.1779	0.85	0.2424	1.20	0.1323	0.64
House ownership	0.1550	0.69	-0.3397	-1.45	-0.6825†	-2.65	-0.5699†	-2.17
Children	0.2094	1.15	0.2213	1.20	0.1530	0.85	0.2829	1.54
Debt age	-0.4130	-0.16	0.1650	0.63	0.3807	1.50	-0.6088†	-2.41
Group loan	0.8582*	3.76	0.4813†	2.25	0.1567	0.73	-0.3705‡	-1.69
Loan amount	-0.7765*	-3.27	-0.8863†	-3.50	-1.2028*	-5.05	-1.9933*	-4.13
Interest rate	0.7250†	2.94	0.2777	1.12	-0.0691	-0.28	0.2345	0.98
Monthly meetings	0.1370	0.61	0.7753*	3.58	0.0166	0.08	-0.4233‡	-1.84
No of observations	284		284		284		284	
Wald $\chi^2$	42.74		76.93		64.57		53.15	
Prob> $\chi^2$	0.0001		0.0000		0.0000		0.0000	
Log likelihood	-158.6116		-146.0385		-157.5241		-153.7125	

\*Significant at 1% level.

†Significant at 5% level.

‡Significant at 10% level.

**Table 5** Probit analysis on determinants of health-related outcomes among recipients of health-awareness programmes

	Overall perceived good health		Improved ability to visit general practitioner		Improved ability to purchase prescribed medicine		Improved multivitamin uptake	
	Coeff.	Z-score	Coeff.	Z-score	Coeff.	Z-score	Coeff.	Z-score
Age	-0.3747‡	-1.70	0.3781‡	1.70	-0.4329‡	-2.02	0.1058	0.48
Religion	0.5185	1.59	-0.5503‡	-1.76	0.3880	1.24	0.1904	0.56
Province	-0.3898	-1.24	1.3048*	4.39	1.029*	3.83	0.1983	0.65
Literacy	-0.1537	-0.65	0.2229	0.91	0.1405	0.61	0.3411	1.43
Spouse literacy	0.4163‡	1.80	0.2546	1.09	0.0860	0.38	0.2310	1.00
House ownership	0.3495	1.42	-0.2453	-0.96	-0.6360†	-2.48	-0.4271	-1.54
Children	0.3209	1.55	0.2765	1.33	0.2424	1.21	0.2833	1.36
Debt age	-0.0066	-0.02	0.4529	1.49	0.3817	1.36	-0.7164†	-2.51
Group loan	0.8817*	3.33	0.3640	1.51	0.1030	0.43	-0.6352†	-2.55
Loan amount	-0.7199†	-2.65	-0.6511†	-2.28	-1.9361*	-3.52	-0.9170*	-3.35
Interest rate	0.6739†	2.23	0.3860	1.28	0.2428	0.83	0.3726	1.26
Monthly meetings	0.2357	0.88	0.7689†	3.08	-0.0556	-0.22	-0.5816†	-2.10
No of observations	314		314		314		314	
Wald $\chi^2$	35.68		64.57		53.25		48.79	
Prob> $\chi^2$	0.0004		0.0000		0.0000		0.0000	
Log likelihood	-126.4054		-116.6811		-128.2105		-121.2616	

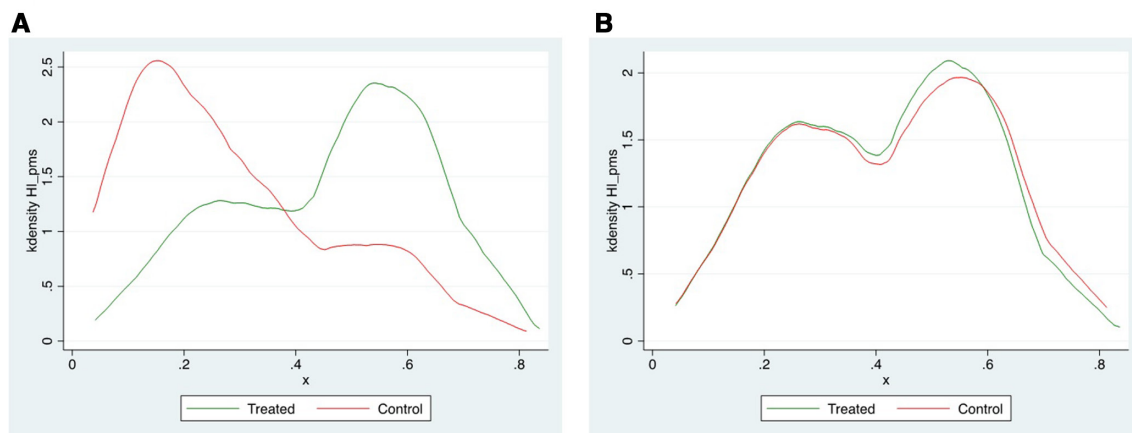
\*Significant at 1% level.

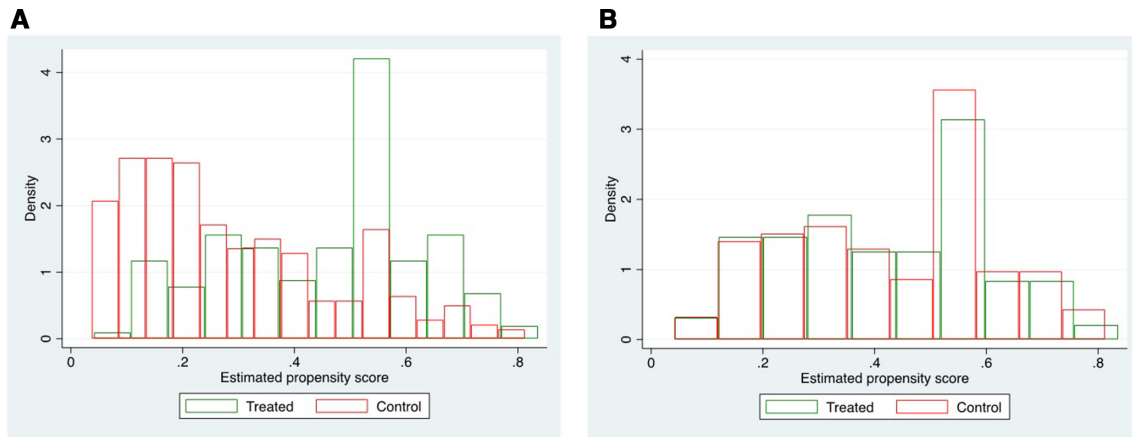
†Significant at 5% level.

‡Significant at 10% level.

not take prescribed medicine unless it is freely available due to the greater need to prioritise the purchase of basic necessities and household consumption.<sup>40</sup> The impact of microfinance interventions is comparable to previous research. A review highlighted that most interventions combined microfinance with health education. However, positive effects were mainly found for health knowledge and behaviour, but not health status.<sup>41</sup> A meta-analysis indicated the potential for women and girls, because microfinance may lead to changes in the use of contraceptives, strengthen female empowerment and improve children's nutrition.<sup>42</sup>

However, for female borrowers of microfinance, there might be additional burdens in the form of loan repayments and small-business investment. Our results suggest that illiterate and poor women in the country are benefiting from health awareness by recognising that if they do not consume prescribed medicine for chronic ailments (heart disease, cholesterol or diabetes) it can have serious consequences for their own lives and the future livelihood of their families. There needs to be an urgent recognition that a triadic health insurance safety net is necessary, instead of dependency on private providers to protect informal working women in Pakistan. Employers

**Figure 1** Kernel density plot (A) before and (B) after matching.



**Figure 2** Density balancing plot (A) before and (B) after matching.

and the government must join forces to ensure universal health insurance and—particularly in these times of the coronavirus pandemic—infectious disease outbreak insurance for health emergencies. State financing of healthcare is essential through an increased allocation of gross domestic product (GDP), government-run business profits, and increasing the income and corporate tax base from the elite.

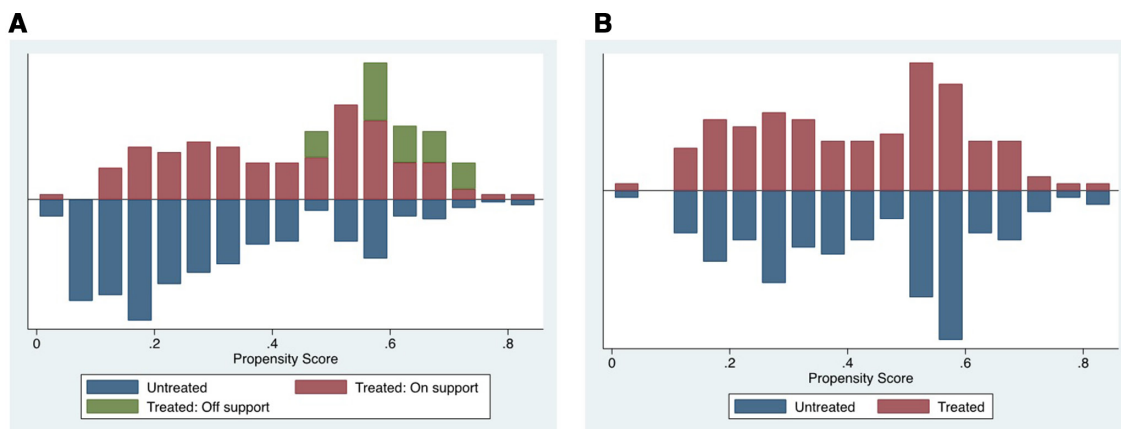
With regard to female microfinance borrowers, we recommend microfinance regulatory bodies to urgently legislate the following reforms: (1) coverage for children and other dependents, maternity costs, and non-hospitalisation costs, (2) expand coverage for religious and ethnic minorities, (3) reduce interest rates for those paying high housing rents and introduce home ownership loans, (4) introduce mandatory group borrowing and monthly meetings with loan officers and (5) alter repayment timelines and interest-rate packages for women taking out bigger loans.

We recommend the following urgent social policy improvements, which would join in helping health policy efforts: (1) the development of public primary healthcare services for women in the communities, with a mandatory quarterly general practitioner meeting, 2) the upgrading of poverty alleviation programmes to support poor

women, (3) the capping of housing rents and improvements in neighbourhood sanitation to curb infection, (4) the advancement of home-based business opportunities for informal female workers to assist in maintaining incomes, including digitalisation and internet access in their homes and (5) income supplementation and cash transfers for multivitamins and food nutritional intake to improve overall immunity and health.<sup>43</sup>

### Limitations

This study has some limitations, most importantly the cross-sectional design. Although we were able to compare the effects of an intervention because of the quasi-experimental analysis framework, two-group cross-sectional designs suffer from the limitations related to a single measurement for all subjects. Therefore, within-person changes over time are not observable. Without repeated measures in a two-group design, causality cannot be identified, because temporal sequencing on the intervention and outcomes cannot be established. For that reason, we recommend longitudinal data collection in future studies. This study focused on comparatively small loans. Therefore, the impact of larger loans (>PKR100 000) on health is not known. Furthermore, the results need to be interpreted with caution, because the



**Figure 3** Common support graph of propensity scores (A) before and (B) after matching.

**Table 6** Balancing of covariates using standardised mean difference and ratio of variances

	Standardised differences		Variance ratio	
	Raw	Matched	Raw	Matched
Age	-0.1320698	-0.1058939	0.9619896	0.9611875
Religion	0.1586396	-0.0071039	1.451878	0.9828996
Literacy	-0.3073917	-0.1159204	0.7931779	0.9171598
Spouse literacy	-0.0719588	0.027969	0.9641836	1.014213
Income	-0.0491266	0.0305069	1.129418	0.9202911
House ownership	0.2189877	0.1585524	0.7669609	0.8061959
Drinking water	0.2226595	0.0116275	0.6952835	0.9813404
Toilet Facility	0.0445714	0.1247478	0.9471727	0.8276644
Gutter drainage	-0.0290293	0.0423519	1.035531	0.9496166
Group loan	0.0250079	0.0549512	1.01166	1.017812
Loan amount	-0.6030964	-0.1454947	1.331749	1.081931
Interest rate	-0.0851667	0.0594108	1.075376	0.9483068
Monthly meetings	0.5404452	0.337374	0.4480249	0.6085328

four health-related outcomes are non-homogeneous and dependent on socioenvironmental factors that are specific to the region and community where the interventions are taking place. In addition, outcome data are based on self-reporting, which can lead to potential measurement errors. Despite these limitations, we feel that this study is significant for the development of microfinance health services in Pakistan and the role of state and interest-free microfinance health interventions.

### Conclusion

It is critical to assess the health needs of women employed in the informal sector. As primary caregivers at home as well as primary contributors to household income, women's health assumes a salience that could place the structures of both the family and the economy at

risk. Health policy must consider several social policies for protecting disadvantaged women, who are poverty ridden, illiterate or semiliterate and loan takers. Health insurance schemes and health promotion in the workplace must be made mandatory for employers, MFPs and the government, given the cultural barriers to uptake for women. Targeting improved equity across female population groups for health interventions will in the long run improve women's health, capacity expansion and income-earning abilities.

Designing and implementing a health and social policy protection net for female informal workers requires empirical evidence regarding which health interventions and sociodemographic characteristics impact on health outcomes. Since public-sector and health-sector

**Table 7** Impact of interventions on health-related outcomes based on propensity score matching

	Overall perceived good health		Improved ability to visit general practitioner		Improved ability to purchase prescribed medicine		Improved multivitamin uptake	
	Coeff.	Z-score	Coeff.	Z-score	Coeff.	Z-score	Coeff.	Z-score
Nearest neighbour matching								
Health insurance	0.1740*	3.45	0.0038	0.04	0.1271	1.46	0.0343	0.38
Health-awareness programme	0.0599	0.97	0.0141	0.23	0.1016‡	1.70	0.0291	0.42
Kernel matching								
Health insurance	0.1175‡	1.67	-0.0256	-0.32	0.1062	1.21	0.0775	1.09
Health-awareness programme	0.0240	0.42	0.0292	0.41	0.1167†	2.08	0.0703	1.15

The covariates used for matching include age, religion, literacy, spouse literacy house ownership, access to drinking water, access to gutter drainage, access to toilet facility, children, debt age, group loan, loan amount, interest rate and monthly meetings.

Matching is performed with one nearest neighbour in terms of propensity score.

\*Significant at 1% level.

†Significant at 5% level.

‡Significant at 10% level.

shortages and inefficiencies are a concern in Pakistan, the 'health card' must be accepted in both the private and public sector, whichever is able to serve the poor first. As Pakistan is struggling with a low GDP and tax collection base, we recommend more research into options for social franchising, and partnerships with independent health insurance companies to serve disadvantaged women.

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#### REFERENCES

- United Nations Pakistan. *One United nations programme III 2018-2022*. United Nations Sustainable Development Framework for Pakistan, 2018.
- Malik MA. *Universal health coverage assessment Pakistan*. Karachi: Aga Khan University, 2015.
- Nishtar S. *Choked pipes: reforming Pakistan's mixed health system*. Oxford University Press Karachi, 2010.
- Nishtar S, Bhutta ZA, Jafar TH, et al. Health reform in Pakistan: a call to action. *Lancet* 2013;381:2291-7.
- Nishtar S, Boerma T, Amjad S, et al. Pakistan's health system: performance and prospects after the 18th constitutional Amendment. *Lancet* 2013;381:2193-206.
- Pakistan Bureau of Statistics. *Pakistan National health accounts 2013-14*. Islamabad: Pakistan Bureau of Statistics, 2014.
- Garikipati S, Johnson S, Guérin I, et al. Microfinance and gender: issues, challenges and the road ahead. *J Dev Stud* 2017;53:641-8.
- Salim MM. Revealed objective functions of microfinance institutions: evidence from Bangladesh. *J Dev Econ* 2013;104:34-55.
- Saba A, Saquiba A. Conceptualizing health and microfinance nexus in Pakistan, 2017. Available: <http://www.pmn.org.pk/assets/articles/69106cec5d4f0132b45673990ab4622d.pdf> [Accessed 1 August 2020].
- Al-Shami SSA, Majid IBA, Rashid NA. Conceptual framework: the role of microfinance on the wellbeing of poor people cases studies from Malaysia and Yemen. *Asian Social Science* 2014;10:230.
- Leatherman S, Dunford C. Linking health to microfinance to reduce poverty. *Bull World Health Organ* 2010;88:470-1.
- Zulfiqar G. Does microfinance enhance gender equity in access to finance? Evidence from Pakistan. *Fem Econ* 2017;23:160-85.
- Escobar M-L, Griffin CC, Shaw RP. *The impact of health insurance in low-and middle-income countries*. Brookings Institution Press, 2011.
- Heltberg R, del Ninno C, Dorosh P. *Social protection in Pakistan: managing household risks and vulnerability*. Washington, DC: Human Development Unit, South Asia Region, World Bank, 2007.
- Malik K, Meki M, Morduch J. *COVID-19 and the future of microfinance: evidence and insights from Pakistan*. Oxford Review of Economic Policy, 2020.
- Mersland R, RØ S. Microfinance: Costs, lending rates, and profitability. In: Caprio G, Arner DW, Beck T, et al., eds. *Handbook of key global financial markets, institutions, and infrastructure*. London: Academic Press, 2016: 489-99.
- O'Malley TL, Burke JG. A systematic review of microfinance and women's health literature: directions for future research. *Glob Public Health* 2017;12:1433-60.
- Jafree SR, Mustafa M. The triple burden of disease, destitution, and debt: small business-women's voices about health challenges after becoming debt-ridden. *Health Care Women Int* 2020:1-24.
- Women's and Children's Health Policy Center. *Women's Health Care Experiences Survey*. Baltimore: Hopkins University Bloomberg School of Public Health, 2000.
- Quinn VJ, Kennedy E. Food security and nutrition monitoring systems in Africa: a review of country experiences and lessons learned. *Food Policy* 1994;19:234-54.
- World Health Organization. *WHO multi-country study on women's health and domestic violence against women: summary report of initial results on prevalence, health outcomes and women's responses*. Geneva: World Health Organization, 2005.
- Martino DV. *Relationship between work stress and workplace violence in the health sector*. Geneva: World Health Organization, 2003.
- Rosenbaum PR, Rubin DB. The central role of the propensity score in observational studies for causal effects. *Biometrika* 1983;70:41-55.
- Becker SO, Ichino A. Estimation of average treatment effects based on propensity scores. *Stata J* 2002;2:358-77.
- Dehejia R. Practical propensity score matching: a reply to Smith and Todd. *J Econom* 2005;125:355-64.
- Dehejia RH, Wahba S. Propensity score-matching methods for nonexperimental causal studies. *Rev Econ Stat* 2002;84:151-61.
- Thuong NTT. Impact of health insurance on healthcare utilisation patterns in Vietnam: a survey-based analysis with propensity score matching method. *BMJ Open* 2020;10:e040062.
- Abadie A, Imbens GW. Matching on the estimated propensity score. *Econometrica* 2016;84:781-807.



- 29 Caliendo M, Kopeinig S. Some practical guidance for the implementation of propensity score matching. *J Econ Surv* 2008;22:31–72.
- 30 Akram M, Khan FJPIDE-Working Papers 32. Health care services and government spending in Pakistan. Islamabad Pakistan Institute of Development Economics; 2007.
- 31 Mumtaz Z, Salway S. 'I never go anywhere': extricating the links between women's mobility and uptake of reproductive health services in Pakistan. *Soc Sci Med* 2005;60:1751–65.
- 32 Padela AI, Zaidi D. The Islamic tradition and health inequities: a preliminary conceptual model based on a systematic literature review of Muslim health-care disparities. *Avicenna J Med* 2018;8:1–13.
- 33 Bhutta ZA, Hafeez A, Rizvi A, et al. Reproductive, maternal, newborn, and child health in Pakistan: challenges and opportunities. *Lancet* 2013;381:2207–18.
- 34 Hafeez A, Mohamud BK, Shiekh MR, et al. Lady health workers programme in Pakistan: challenges, achievements and the way forward. *J Pak Med Assoc* 2011;61:210.
- 35 Hamid SA, Roberts J, Mosley P. Evaluating the health effects of micro health insurance placement: evidence from Bangladesh. *World Dev* 2011;39:399–411.
- 36 Prost A, Colbourn T, Seward N, et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. *Lancet* 2013;381:1736–46.
- 37 Jacoby MB. Does indebtedness influence health? A preliminary inquiry. *J Law Med Ethics* 2002;30:560–71.
- 38 Taylor L. Housing and health: an overview of the literature. *Health Affairs Health Policy Brief* 2019.
- 39 Bauhoff S, Hotchkiss DR, Smith O. The impact of medical insurance for the poor in Georgia: a regression discontinuity approach. *Health Econ* 2011;20:1362–78.
- 40 Zaidi S, Bigdeli M, Aleem N, et al. Access to essential medicines in Pakistan: policy and health systems research concerns. *PLoS One* 2013;8:e63515.
- 41 Lorenzetti LMJ, Leatherman S, Flax VL. Evaluating the effect of integrated microfinance and health interventions: an updated review of the evidence. *Health Policy Plan* 2017;26:czw170–56.
- 42 Gichuru W, Ojha S, Smith S, et al. Is microfinance associated with changes in women's well-being and children's nutrition? A systematic review and meta-analysis. *BMJ Open* 2019;9:e023658.
- 43 Saha S. Provision of health services for microfinance clients: analysis of evidence from India. *International Journal of Medicine and Public Health* 2011;1:1–6.

**Supplementary Table 1a: Descriptive statistics before matching for health insurance (T=0 and T=1)**

Variable	No health insurance (T=0)		Health insurance (T=1)		Difference	p-value
	Mean	SD	Mean	SD		
Age	0.455	0.499	0.390	0.489	0.065	0.188
Religion	0.097	0.297	0.150	0.358	-0.052	0.103
Literacy	0.396	0.490	0.253	0.436	0.142	0.003
Spouse Literacy	0.385	0.488	0.351	0.479	0.035	0.473
House ownership	0.712	0.454	0.805	0.397	-0.093	0.032
Children	0.563	0.497	0.714	0.453	-0.152	0.002
Drinking water	0.771	0.421	0.857	0.351	-0.086	0.034
Toilet facility	0.760	0.428	0.779	0.416	-0.019	0.657
Gutter drainage	0.747	0.436	0.733	0.443	0.013	0.771
Debt age	0.670	0.471	0.669	0.472	0.001	0.978
Group loan	0.410	0.493	0.422	0.496	-0.012	0.802
Loan amount	0.750	0.433	0.468	0.501	0.283	<0.001
Interest rate	0.708	0.455	0.669	0.472	0.040	0.391
Monthly meetings	0.674	0.470	0.890	0.314	-0.216	<0.001

**Supplementary Table 1b: Descriptive statistics after matching for health insurance (T=0 and T=1)**

Variable	No health insurance (T=0)		Health insurance (T=1)		Difference	p-value
	Mean	SD	Mean	SD		
Age	0.450	0.500	0.433	0.498	0.017	0.796
Religion	0.125	0.332	0.150	0.359	-0.025	0.576
Literacy	0.308	0.464	0.308	0.464	0	1.000
Spouse literacy	0.425	0.496	0.375	0.486	0.050	0.431
House ownership	0.825	0.382	0.792	0.408	0.033	0.514
Children	0.650	0.479	0.642	0.482	0.008	0.893
Drinking water	0.833	0.374	0.817	0.389	0.017	0.735
Toilet facility	0.842	0.367	0.792	0.408	0.050	0.319
Gutter drainage	0.725	0.448	0.750	0.435	-0.025	0.662
Debt age	0.658	0.476	0.683	0.467	-0.025	0.682
Group loan	0.467	0.501	0.400	0.492	0.067	0.299
Loan amount	0.475	0.501	0.483	0.502	-0.008	0.898
Interest rate	0.667	0.473	0.625	0.486	0.042	0.502
Monthly meetings	0.892	0.312	0.858	0.350	0.333	0.437

**Supplementary Table 2a: Descriptive statistics before matching for health awareness programme (T=0 and T=1)**

Variable	No health awareness programme (T=0)		Health awareness programme (T=1)		Difference	p-value
	Mean	SD	Mean	SD		
Age	0.476	0.501	0.394	0.490	0.082	0.084
Religion	0.087	0.283	0.140	0.348	-0.05	0.086
Literacy	0.383	0.487	0.314	0.465	0.070	0.124
Spouse literacy	0.379	0.486	0.369	0.483	0.010	0.829
House ownership	0.762	0.427	0.729	0.446	0.033	0.424
Children	0.573	0.496	0.653	0.477	-0.080	0.086
Drinking water	0.820	0.385	0.784	0.412	0.037	0.034
Toilet facility	0.728	0.446	0.801	0.400	-0.727	0.072
Gutter drainage	0.699	0.460	0.780	0.415	-0.081	0.053
Debt age	0.636	0.482	0.699	0.460	-0.063	0.159
Group loan	0.442	0.498	0.390	0.489	0.052	0.270
Loan amount	0.767	0.424	0.551	0.498	0.216	0.000
Interest rate	0.660	0.475	0.725	0.448	-0.064	0.143
Monthly meetings	0.626	0.485	0.856	0.352	-0.230	<0.001

**Supplementary Table 2b: Descriptive statistics after matching for health awareness programme (T=0 and T=1)**

Variable	No health awareness programme (T=0)		Health awareness programme (T=1)		Difference	p-value
	Mean	SD	Mean	SD		
Age	0.469	0.502	0.424	0.496	0.045	0.923
Religion	0.135	0.343	0.139	0.347	-0.003	0.940
Literacy	0.344	0.477	0.285	0.453	0.059	0.334
Spouse literacy	0.375	0.487	0.417	0.495	-0.042	0.521
House ownership	0.833	0.375	0.792	0.408	0.042	0.424
Children	0.604	0.491	0.674	0.471	-0.069	0.272
Drinking water	0.813	0.392	0.833	0.374	-0.021	0.679
Toilet facility	0.781	0.416	0.840	0.368	-0.059	0.249
Gutter drainage	0.677	0.477	0.778	0.417	-0.101	0.083
Debt age	0.667	0.474	0.674	0.470	-0.007	0.911
Group loan	0.448	0.500	0.424	0.496	0.024	0.711
Loan amount	0.573	0.497	0.417	0.495	0.156	0.018
Interest rate	0.667	0.474	0.632	0.484	0.035	0.584
Monthly meetings	0.854	0.355	0.889	0.315	-0.035	0.428



# Relationship between Microfinance, Social Development and Women's Health

## Cover Letter for Participants

### Questionnaire Information for Women Microfinance Borrowers

Researcher: Dr. Sara Rizvi Jafree, e-mail: [sararizvijafree@gmail.com](mailto:sararizvijafree@gmail.com); 0300 400 5740

**Thank you** for your valuable time! Your name is not required and all research analysis will be undertaken with confidentiality and complete anonymity. At any point during the interview you may leave, if you wish to do so.

**(Translation in Roman Urdu: Apka Bohat Shukriya** apke eemtay waat ke liye! Apke Nam Ka Bharna Zaruri Nahi Hai Aur Yeh Tehkeek Ko Khoofiya Rakha Jaye Ga. Interview ke doran ap kabhi bhi uth ke jaana chahey to apko puri ijazat hai.)

The questionnaire has been designed to collect information about your loan portfolio and your self-rated health. Our aim is to understand your needs and challenges, and ultimately try to improve your loan portfolio and health access and services.

**((Translation in Roman Urdu: Is questionnaire Ka Masad Hai ke apse chand sawal loan aur sehat ke bare mein puchna. Humara masad ye hai ke apke arze ki sahuliyat aur sehat dono ko behtar kiya jaye.))**

Your honest and reliable answers will be appreciated, so that we can recommend the best solutions with regard to optimal loan portfolios and health satisfaction.

**((Translation in Roman Urdu: Apke Sache Aur Ba Aitibar Jawab Ke Shukarguzar Honge, Thake loan aur sehat ke hawale se hum apke mushkilay ya rukawaton ko Samajh Sake.))**

In the event that you feel disturbed or upset after answering questions or recalling memories related to health problems or experiences of violence/ harassment, you may call or text the researcher for free consultation services from trained female psychologists.

**((Translation in Roman Urdu: Agar apko in sawal aur jawab ki wajah se koi preshani ho ya koi aisa waiya yad a jaye jo apki zehni pareshani mein izafa kare, tho ap upar diye gaye number par call ya text kar ke rabta kar le. Hum apki muft mein madat zanana mahir-e-nafsiyat se karwayenge.))**

Sign or Thumb Impression for Written Consent

## Instrument

The questionnaire will be read out and completed by the researcher, on behalf of the participant.

Province/City: \_\_\_\_\_

Microfinance

Provider: \_\_\_\_\_

Area/locality: \_\_\_\_\_

Participant Code: \_\_\_\_\_

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS					Code Entry
Q1.Age Umar?	1.20-29	2.30-39	3.40-49	4.50+	
Q2.Religion Mazhab	1.Muslim	2.Christian	3.Hindu	4.Other	
Q3.Province Sooba?	1.Punjabi	2.Sindhi	3.Baluchi	4.KPK	
Q4.City Shehr?	1.Lahore 2.Islamabad	3.Karachi 4.Hyderabad	1.Quetta	1.Peshawar	
Q5.City-Area					
Q6.Language spoken at home with family Madri zubaan?					
Q7.Race (β) Zaat					
Q8.Marital Status Kya ap shadi shuda hain?	1.Married	2.Single	3.Divorced	4.Seperated	
Q9.Literacy Taleem-i-qabiliyat	1.None	2.Primary	3.Secondary	4.Graduate	
Q10.Occupation Pesha					
Q10.Spouse literacy Aapkay khaawand ki taleemi qabiliyat kya hai?	1.None	2.Primary	3.Secondary	4.Graduate	
Q12.Spouse Occupation Apkay khawand ka pesha kya hai?					
Q13>Your earning in last month Pichlay mahinay aap ki kamai kitni thi?	1.Less than 5k	2.>5k-10k	2.>10k-20k	4.Other	
Q14>Your earning in last year Pichlay saal apki kitni kamai thi?	1.Less than 50k	2.>50k-70k	2.>70k-90k	4.Other	
Q15.Combined household income in a month (on average) Tamaam ghar ki amdani kitni hai?	1.Less than 10k	2.>10k-15k	2.>15k-20k	4.Other	
Q16.House Ownership Ghar ka malik kaun hai?	1.Owned	2.Rented	3.Living with someone	4.Other	
Q17.Number of children Apkay kitnay bachay hain?	1. None	2. 1-2	3. 3-5	4. >6	
Q18.Age of last child Akhri bachay ki umar?					
Q19.Number of people living in house Ghar mai kitnay afraad rehte hain?	1. 1-2	2. 3-5	3. 6-9	4. >10	

Q20.Number of rooms in house Ghar mai kitnay kamray hain?	1. 1	2. 2-3	3. 4-5	4. >6	
Q21.Are you currently taking care of a disabled/ dependent family member Kya ap kay ghar mai koi mazoor/jiska ap par inhasaar ho, shakhs hai?	1.No	2.Yes	If Yes, who:		
Q22.Source of drinking water Pani penay ka kya zarya hai?	1.Plain Tap	2.Filtered	3.Local Pump	4.Other	
Q23.Type of energy used for cooking in house Ghar mai khana pakanay ke liye kis chiz ka istemaal kartay hain? (gas, coal, electric etc.)	1.Gas	2.Wood	3.Electricity	4.Other	
Q24.Do you have toilet facility in house Ap kay ghar mai bait-ul-khala hai?	1.Yes	2.No	If No, what do you use		
Q25.How many toilets in the house Ghar mai kitnay bait-ul-khala hain?	1. None	2. 1-2	3. 3-5	4. >6	
Q26.Does the toilet have a flush Bait-ul-khala mai flush hai?	1.Yes	2.No	If No, what do you use		
Q27.Is the drainage and gutter system of your house satisfactory Ganday pani ke ikhraj ka nizaam darust hai?	1.Yes	2.No			
Q28.How do you dispose of the garbage Ghar ki gandagi kahan phenkhtay hain?	1.Throw it on street/ far away from home	2.Garbage collectors come to house	3.Set Fire	4.Other	
Q29.Are you taking any health insurance (not provided by the microfinance provider)? (If so, from where, how much installment) Sehat ke liye insurance le rae hain?	1.Yes	2.No	If Yes, who		
<b>SECTION B: MICROFINANCE LOAN CHARACTERISTICS</b>					
Q30.Why are you taking loan (describe your work type, hours of work, working conditions in detail) Aap karz kyun le rahe hain? (kis tarah ka kaam hai, kitnay ghantay kaam kartay hain, jahan kaam kartay hain us kay halaat)					
Q31.What type of loan are you currently taking/ duration Kis tarah ka karz le rahay hain/kitnay arsay se?					
Q32.How long have you been a microfinance borrower for Kitne arsay se karz le rahay hain?	1. 1-2 years	2. 3-5 years	3. 6-9 years	4. >10 years	
Q33.Is it a group loan Kya ap ne kisi ke sath mil ke karz liya hai?	1.Yes	2.No	If Yes, who		
Q34.How much is the loan for Kitna karz liya hai?					
Q35.What is the installment rate per month Karz ko ada karnay ki mahana kist kya hai?					
Q36.Do you attend monthly meetings with loan officers Karz denay walay officer se kya apki mahwar mulakaat hoti hai?	1.Yes	2.No			
Q37.Do you attend weekly meetings with loan officers Karz dene walay officer se kya apki haftawar mulakaat hoti hai?	1.Yes	2.No			
Q38.Who helps you in loan repayment Karz ada karnay mai kya koi apki madad karta hai?	1.No one	2.Husband	3.Parents	4.Other	
Q39.What exactly has the loan been used for Ap karz kis liye istemal karti hain?	1.Business	2.Household expenditure	3.Old Loans	4.Health Costs	4.Other

Q40. How much of the loan taken has been invested in business Karz ka kitna hissa karobar mai kharch kiya hai?	1.All	2.Half	3.Quarter	4.Other	
Q41. Are you satisfied with loan amount Kya aap karz ki rakam se mutmaeen hai?	1.Yes	2.No			
Q42. Are you satisfied with loan repayment rate Kya ap karz ki adaigi ki kist se mutmaeen hai?	1.Yes	2.No			
Q43. Will you be renewing loan Kya aap karz dobara lena chahain gae?	1.Yes	2.No			
Q44. Have you received any skill development training Kya apki silahiyaton ko barhanay ki koi tarbiyat mili hai?	1.Yes	2.No			
Q45. Have you participated in any health workshop/awareness campaign/talk... Kya sehat se mutalik ap kisi agahi mohim ka hissa banay hai?	1.Yes	2.No			
Q46. Has your loan officer or center ever talked to you about health awareness or access Kya karz denay walay officer ne ap se sehat ke mutalik koi agahi di hai?	1.Yes	2.No			
Q47. Have you been offered saving insurance by your MFP Kya idaray ne apko bachat insurance ki peshkash ki hai?	1.Yes	2.No			
Q48. Are you taking saving insurance with your MFP Kya idara ap ko bachat insurance de raha hai?	1.Yes	2.No			
Q49. Have you been offered health insurance by your MFP Kya idara aap ko sehat insurance deta hai?	1.Yes	2.No			
Q50. Are you taking health insurance with your MFP Kya ap idaray se sehat insurance le rahay hain?	1.Yes	2.No			
Q51. Has the loan so far satisfied your business needs Kya karz ki rakam ne apki karobari zaroriyat ko pura kiya hai?	1.Yes	2.No			
Q52. Has your loan taking from MF enabled you to visit a trained private <b>general</b> practitioner, if needed in last 12 months Karzay k baad pichlay 12 maheenay mein kya app private doctor ko dekhanay gaye hain?	1.Yes	2.No			
Q53. Has your employment from MF loan enabled you to visit a trained private <b>specialist</b> practitioner, if needed in last 12 months Karzay k baad pichlay 12 maheenay mein kya app baday doctor ko dekhanay gaye hain?	1.Yes	2.No			
Q54. How is your ability to purchase prescribed medicines (in case recommended by doctor) since loan-taking? Kya karz lene ke bad dawayan khareednay ki istata'at mai koi tabdeeli ai hai?	1.Very Good	2.Good	3.Fair	4.Poor	
<b>SECTION C WOMEN'S HEALTH CARE EXPERIENCES SURVEY</b>					
Q55. How would you rate your health in general? Apki sehat kis mayar ki hai?	1.Very Good	2.Good	3.Fair	4.Poor	
Q56. Compared to other women your age, how would you rate your health Apni hum umar auraton ki nisbat aap apni sehat ka kya mayaar samjhtay hain?	1.Very Good	2.Good	3.Fair	4.Poor	
Q57. Do you feel your health could be better than	1.Yes	2.No	If yes, could you say why/how:		

it is presently? Kya apki sehat ke mayaar mai koi behtari lai ja sakti hai?				
Q58.Does your husband/ male relative/in-laws decide/ give approval when you or your children need consultation from a medical practitioner Kya apka khawand/susral apko doctor pe janay ki ijazat deta hai? Kya ye faisla bhi apka susral/khawand krta hai?	1.Yes	2. I decide myself independently	If yes, can you specify which relatives:	
Q59.Does your husband/ male relative/in-laws decide/ give approval when you or your children need to visit a clinic/ hospital Kya apka khawand/susral apko hospital janay ki ijazat deta hai or kya ye faisla kaun leta hai?	1.Yes	2. I decide myself independently	If yes, can you specify which relatives:	
<b>Please indicate if you have experienced any of the following health issues in the last 12 months?</b>	1.Yes	2.No		
Q60.Minor illness like the flu or an infection Pichlay 12 mahinay mai apko nazla ya infection hua hai?				
Q61.Had to go for a checkup or routine physical exam Jismani muaaenay ke live gae hain?				
Q62.Were you pregnant? Kya app hamla theen?				
Q63.Did you need family planning or pre-conceptual services? Kya apko munsoba bandi ki zaroorat thee?				
Q64.Did you have an injury that you have not already mentioned? Kya apko koi chot lagi hai?				
Q65.Did you need care for a chronic health problem, (that is one that goes on for a long time)? Kya apko kisi taweel bemari ke live hospital jana para hai?				
Q66.Did you need surgery for a condition not already mentioned? Kya apko operation keranay ki zaroorat parhi?			If yes, what?	
Q67.Were you feeling depressed, anxious, or highly stressed? Kya iski waja se apko kisi kisam ka zehni dabao ya bechaini mehsoos hui hai?			Could you pinpoint why?	
<b>Have you had one of the following tests in the last 12 months?</b>	1.Yes	2.No		
Q68.Colon cancer screening, such as a check for blood in your stool, sigmoidoscopy, or colonoscopy				
Q69.Test for glaucoma or pressure in the eye				
Q70.Blood cholesterol test				
Q71.Check for high blood pressure				
Q72.Test for diabetes				
Q73.Breast exam by a doctor or nurse				
Q74.Mammogram				
Q75.Pap test				
Q76.Bone density test (for osteoporosis)				
Q77.Genetic screening test				
Q78.Screening for HIV/AIDS				

Q79.Screening for other sexually transmitted diseases				
Q80.Dental exam				
Q81.Shot for flu or pneumonia				
Q82.Pregnancy test				
Q83.Family planning services or contraception				
Q84.Tests for infertility				
Q85.Abortion information or services				
Q86.Alcohol or drug abuse counseling or treatment				
<b>In the past 12 months, did any of your health care providers or microfinance loan managers talk with you or give you information about? (pichlay 12 mahino mai kya apkay doctor/nurse ya apkay karz dene walay officer ne aap se in chizon ke baray mai maloomat di hain?)</b>	1.Yes	2.No	If yes, can you specify who gave you this information:	
Q87.Smoking, second-hand smoke, or quitting smoking Tambako noshi, kisi aisay shaks k saath bethna/rehna jo tambako noshi mein mulawis ho, ya tambako noshi chorna				
Q88.Nutrition or diet (Khuraak)				
Q89.Alcohol or drug use Shraab ya adviyaat?				
Q90.Physical fitness or exercise Jismani sehat ya warzish?				
Q91.Menopause or hormone replacement therapy San - e - yaas ya hormone tabdeeli therapy?				
Q92.Violence in the home or workplace Kya ghar ya kaam pe kisi tashadud ka shikar hue hain?				
Q93.Work or financial problems Kaam ya muaashi mushkilaat ka samna hua hai?				
Q94.Family or relationship problems Ghar walon ya rishtadaron ke masa'il?				
Q95.Importance of child health and nutrition Bachon ki sehat or khuraak ki ehmiyat?				
Q96.Stress management Zehani dabao ko kum karna				
Q97.Preventing unintended pregnancies & birth spacing Bachon ke darmiya wakfa?				
Q98.Using alternative therapies, such as herbs or acupuncture				
Q99.Preventing osteoporosis Hadion ke dard se bachao				
<b>Are there any dietary supplements that you have used in the last 12 months?</b>	1.Yes	2.No		
Q100.Vitamin C				
Q101.Vitamin D				
Q102.Vitamin E				
Q103.B Complex				
Q104.Calcium				
Q105.Pregnancy Vitamin				
Q106.Lactation Vitamin				

Q107.General Multi-vitamin					
<b>What is your personal preference for health services?</b> Tibbi saholiyat se mutalik apki zaati tarjihaat kya hain?	1.Yes	2.No	3.Indfferent		
Q108.Family (e.g. mother/ mother-in-law/ aunt) Ghar walay?				If Yes, describe who:	
Q109.A women's health center where you can get most of your basic health care, including gynecological care, in one place Khawateen ki sehat markaz?					
Q110.Trusted community member Baradari?					
Q111.A nurse or LHW (Not a physician/ surgeon/ medical consultant)					
Q112.PublicHospital					
Q113.Local female healer					
Q114.Private Clinic					
Q115.In general, how difficult have you found it to talk to health care providers about your personal health concerns? doctor/nurse se baat krna apko kitna mushkil lagta hai?	1.Very difficult	2.Somewhat difficult	2.Not too difficult	3.Not difficult at all	
<b>Please rate the health practitioner services as you have experienced them?</b>	1.Excellent	2.Good	3.Fair	4.Poor	
Q116.Listening to what you have to say Kya apki baat ghor se suntay hain?					
Q117.Talking to you in a respectful and caring manner Kya ap se izzat se baat kartay hai?					
Q118.Speaking to you in the language/ dialect you understand better Kya apse apki madri zubaan mai baat krtay hai					
Q119.Answering your questions clearly Ap ke sawalon ka sahi se jawaab detay hai?					
Q120.Giving you the opportunity to ask all of your questions Apko sawaal puchnay ka wakt detay hai?					
Q121.Helping you to feel comfortable talking about your personal or sensitive health concerns Kya ap asaani se unhe apnay masaael ke baray mai bata deti hain?					
Q122.Giving you complete health information Kya sehat se mutalik tamaam jankari detay hain?					
Q123.Discussing alternative therapies, diet and lifestyle Kya ap se mutabadil therapy ya khuraq ya roz mara ki zindagi guzarnay kay tareekay pe tabadal e khayal kya hai?					
Q124.Giving you complete information about any tests or services Test ke baray mai mukamal jaankari detay hain?					
Q125.Giving you the results of your tests Test ke nataij batatay hain?					

Q126. Giving you complete information about all your options for treatments Kya ilaaj ke mutalik apko mukamal jaankari detay hai?					
Q127. Giving you the opportunity to make important decisions about your health care Kya sehat se mutalik tamam faislay apko karnay detay hai?					
Q128. Giving you written or printed information when you need it Malumaat likh kr dete hai?					
Q129. Spending enough time with you during your visits Apko tasali bakhsh wakt detay hai?					
Q130. Treating you like a partner in your health care Apka sathi bun kr apki sehat ka khayal rakhtay hai?					
<b>Which are the primary/ most important sources you depend on for making health decisions?</b> Sehat se mutalik faislon ke liye ap kis se mashwara leti hai?	Tick relevant options				
Q131. Husband					
Q132. Mother in law					
Q133. Other in-laws (list please)					
Q134. Blood family (parents, siblings, children...)					
Q135. Newspapers / magazines					
Q136. Health newsletter					
Q137. TV					
Q138. Radio					
Q139. Microfinance provider					
Q140. Internet					
Q141. Mobile services					
Q142. Family/ friends					
Q143. Community					
Q144. Medical Practitioner					
Q145. Local Healer					
Q146. Local Imam/ religious leader					
Q147. Other (Please list)					
<b>Current Health Risks</b>					
Q148. Do you currently smoke? Kya app tambako noshi mein mulawis hain?	1. Yes	2. No			
Q149. How many in a day? Din ke kitnay ?					
Q150. Does anyone else smoke in the house when you/ children are in same room? Kya koi aur tambako noshi mein mulawis hain	1. Yes	2. No	If yes, who is this:		
Q151. Do you feel anxious, stressed, depressed, suicidal? Kya app kabhi bechain hotay hain ya zehni dabao ka shakar ya khud kushi ka khayal aya hai?	1. Yes	2. No	Indicate which:		
Q152. Do you take any drugs (to relieve yourselves of stress or an ailment)? Kya app in ke liye koi dawa laitay hain?	1. Yes	2. No	If yes, which ones:		



<b>In the past 5 years, has a doctor ever told you that you have any of the following conditions</b> Kya pichlay paanch salon mai doctor ne aapko bataya ke apko ye bemari hai?	Tick relevant options				
Q153.Hypertension/ BP High blood pressure					
Q154.Heart disease Dil ki bemari					
Q155.High cholesterol					
Q156.Diabetes (sugar)					
Q157.Depression Zehni dabao					
Q158.Anxiety Bechani					
Q159.Migraine headaches (sar dard)					
Q160.Arthritis Joro ki dard					
Q161.Osteoporosis					
Q162.Obesity/ Over-weight problems (mutapa)					
Q163.Urinary incontinence (pishaap ki takleef)					
Q164.Cancer					
Q165.Eating disorder like bulimia/ anorexia Khanay k hawaly se koi mushkil, jaisay bhook na lagna ya kha k ulti kerna					
Q166.Thyroid problems					
Q167.Malaria/ Dengue					
<b>Are you facing any disability which?</b> Kya aap kisi mazoori ka shikaar hain?	1.Yes	2.No			
Q168.Keeps you from participating fully in your ability to take care of your family Jiski waja se ap apnay ghar walon ka khayal na rakh sakain				If yes, please describe this disability:	
Q169.Keeps you from participating fully in your ability to continue with your business Apnay karobaar mai sahi se kaam na kr sakain				If yes, please describe this disability:	
<b>SECTION D BASELINE NUTRITION AND FOOD SECURITY SURVEY UNICEF</b>					
Q170.In the past 6 months did you find it too expensive to purchase the foods you needed to feed your family? Pichlay 6 maah mai kya apko khaandan ko palnay ke liye khana lenay mai mushkilaat hoti hai?	1.Yes	2.No			
Q171.Did you find it too expensive to purchase fruit? Kya phal khareedna bohat mehnga hai?	1.Yes	2.No			
Q172.Did you find it too expensive to purchase	1.Yes	2.No			

vegetables? Kya sabzi khareedna bohat mehnga hai?				
Q173.Did you find it too expensive to purchase meat? Kya gosht khareedna bohat mehnga hai?	1.Yes	2.No		
Q174.Did you find it too expensive to purchase eggs? Kya anday khareedna bohat mehnga hai?	1.Yes	2.No		
Q175.Did you find it too expensive to purchase milk? Kya doodh khareedna bohat mehnga hai?	1.Yes	2.No		
Q176.Did you find it too expensive to purchase wheat, for roti? Kya roti khareedna bohat mehnga hai?	1.Yes	2.No		
Q177.In the last 3 months were you worried about running out of food because of high costs? Pichlay 3 maah mai mehngai ki waja se khana na khareed panay ka dart ha?	1.Yes	2.No		
Q178.In the last 3 months did you run out of food because of expense? Pichlay 3 maah mai kya mehngai ki waja se kabhi ghar mai khana khatam ho gaya ho?	1.Yes	2.No		
Q179.In the last 3 months did you or any other adult in the house skip meals because there was not enough food? Pichlay 3 maah mai aap ya kisi or ghar walay se khana kum honay ki waja se khana na khaya ho?	1.Yes	2.No		
Q180.In the last 3 months did you ever think your children are still hungry because of not being fed enough food? Pichlay 3 maah mai apko kabhi laga ke apkay bachay bhookay hai kyunkay khana pura nai tha?	1.Yes	2.No		
Q181.In the last 3 months did any of your children go to bed hungry? Pichlay 3 maah mai kya apkay bachay kabhi bhookay soe houn?	1.Yes	2.No		
<b>SECTION E</b>				
<b>WHO MULTI-COUNTRY STUDY ON WOMEN'S HEALTH AND DOMESTIC VIOLENCE AGAINST WOMEN</b>				
<b>Psychological violence experienced at home</b>	1.Yes	2.No	If yes, who were these household members?	
Q182.Has someone in your home insulted you or made you feel bad about yourself? Kya ghar mai kisi ne apki bezati ki hai?				
Q183.Has someone in your home belittled or humiliated you in front of other people? Kya ghar mai kisi ne apko dosron ke samnay hakeer dikhaya hai?				
Q184.Has someone in your home done things to scare or intimidate you on purpose? Kya ghar mai kisi ne apko daraya hai?				
Q185.Has someone in your home threatened to hurt you or someone you care about? Kisi ne apko damkhaya hai?				
<b>Physical violence experienced at home</b>	1.Yes	2.No	If yes, who were these	

			household members?	
Q186.Has someone in your home slapped you or thrown something at you that could hurt you? Kya kisi ne apko thapar lagaya ho ya app e koi chiz phenki ho jisse apko chot lagi ho?				
Q187.Has someone in your home pushed or shoved you? Ghar pe apko kisi ne dhaka diya hai?				
Q188.Has someone in your home hit you with his fist or with something else that could hurt you? Kisi ne apko mukkay marain hai?				
Q189.Has someone in your home kicked you, dragged you or beaten you up? Kisi ne apko laot mari ho ya ghaseeta ho?				
Q190.Has someone in your home choked or burnt you on purpose? Kisi ne jaan bojh kr apka gala dabanay ki, ya jalanay ki koshish ki hai?				
Q191.Has he threatened to use or actually used a gun, knife or other weapon against you? Apkay khilaf koi hathyaar istemal kiya hai?				
<b>Sexual violence experienced at home</b>	1.Yes	2.No		
Q191.Has your husband physically forced you to have sexual intercourse when you didn't want to? Kya apke shohar ne kisi kisam ka jinsi tushadad kiya hai?				
Q192.Did you ever have sexual intercourse when you didn't want because you were afraid of what your husband might do? Kiya app ne kabhi apnay shohar k darr se uss ke saath jinsi taluqat rakhain hain?				
Q193.Has your husband forced you to do something sexual that you found degrading or humiliating? Kya apkay shohar ne kabhi app se aisay jinsi kaam keraye hain jin se app sharminda ya zilat mehsoos kerain?				
<b>SECTION F SURVEY OF WORKPLACE VIOLENCE WHO</b>				
Q194.Describe where exactly your work takes place, when outside of home Ghar se bahir kahan kaam karti hai?				
Q195.What kind of people do you interact with mostly for work, outside of home (gender Kam pe kis tarah ke log se mulakat hoi hai?				
Q196.What are the hours that you are required to work outside of home Ghar se bahir kaam ke silsalay mai kitnay ghnatay lagtay hai?				
Q197.Which security measure is available to you outside of home in case of fear of violence (male relative accompanying, phone, moving in crowd...) Tashadud ki soorat mai kaam pr koi hifazati intezam hotay hai?				
<b>Physical Violence (PV) at the workplace</b>				
Q198.In the last 12 months, have you been physically attacked in your workplace/ when you are working outside of home? Ghar se bahir kaam kartay wakt kisi tarah ke tashadud ka shikar	1.Yes	2.No		

hui hain?					
Q199. Was this PV with a weapon? (If yes, what kind) Kya is tashadud ke liye koi aslaah istemal kiya gaya tha?					
Q200. Is this a typical incident at your workplace/ when you are working outside of home? Kya is tarah ka tashadud kaam pr mamool ki baat hai?	1. Yes	2. No			
Q201. Who attacked you? Kis ne app r tashadud kiya?					
Q202. Where exactly did it take place? Tashadud kis jaga hua?					
Q203. What time was it? Kis wakt hua?					
Q204. Do you think it could be prevented? Kya is tashadud roka ja sakta tha?	1. Yes	2. No			
Q205. Were you injured? Kya apko kisi kism ki chot ai thi?	1. Yes	2. No			
Q206. Did you require treatment for the injury? Kya is chot/zakham ke liye apko kisi ilaj ki zarorat hui?	1. Yes	2. No	If yes, can you describe this treatment:		
Q207. How did you respond to the incident? Tashadud ke natijay mai ap ne kya kiya?					
<i>Did you suffer any of the following due to PV:</i>					
Q208. Repeated, disturbing memories, thoughts, or images of the attack? Tashadud ke bad kya apko iske baray mai aksar khayalat atay the?	1. Yes	2. No			
Q209. Avoiding thinking about or talking about the attack or avoiding having feelings related to it? Kya is tashadud ke baray mai baat karne se ap ghabrati thi?	1. Yes	2. No			
Q210. Being "super-alert" or watchful and on guard? Tashadud ke bad dar ke rehne lagi?	1. Yes	2. No			
Q211. Feeling like everything you did was an effort? Har kaam mushkil ho gaya?	1. Yes	2. No			
<b>Verbal Violence (VV) at the workplace</b>					
Q212. In the last 12 months, have you been verbally assaulted in your workplace/ when you are working outside of home? Kya pichlay 12 mah mai kaam pr kisi ne ap pr zabani tashadud kiya hai?	1. Yes	2. No			
Q213. How often has this happened in the last 12 months? Kitni dafa?	1. Daily	2. About once in a week	3. About once in a month	4. Other	
Q214. Is this a typical incident at your workplace/ when you are working outside of home? Kya ye kaam pr mamool ki baat hai?	1. Yes	2. No			
Q215. Who abused you? Kis ne aap per zabani tashadud kiya?					
Q216. Where exactly did it take place? Kahan kiya?					
Q217. What time was it? Kis wakt kiya?					

Q218.Do you think it could be prevented? Kya isse roka ja sakta tha?	1.Yes	2.No			
Q219.How did you respond to the incident? Iske natijay mai aap ne kya kiya?					
<i>Did you suffer any of the following due to VV:</i>					
Q220.Repeated, disturbing memories, thoughts, or images of the attack? Tashadud ke bad kya apko iske baray mai aksar khayalat atay the?	1.Yes	2.No			
Q221.Avoiding thinking about or talking about the attack or avoiding having feelings related to it? Kya is tashadud ke baray mai baat karne se ap ghabrati thi?	1.Yes	2.No			
Q222.Being "super-alert" or watchful and on guard? Tashadud ke bad dar ke rehne lagi?	1.Yes	2.No			
Q223.Feeling like everything you did was an effort? Har kaam mushkil ho gaya?	1.Yes	2.No			
<b>Sexual Harassment (SH) at the workplace</b>					
Q224.In the last 12 months, have you been sexually harassed in your workplace/ when you are working outside of home? Kya pichlay 12 maheenay mein ap ko kisi kisam k jinsi harasaan ka samna kerna parha hai?	1.Yes	2.No			
Q225.How often have you been sexually harassed in the last 12 months? Pichlay 12 maheenay mein yeh kitni dafa hua?	1.Daily	2.About once in a week	3.About once in a month	4.Other	
Q226.Is this a typical incident at your workplace/ when you are working outside of home? Kya yeh kaam kernay wali jaga pe amoman hota hai?	1.Yes	2.No			
Q227.Who attacked you? Hamla awar kaun tha?					
Q228.Where exactly did it take place? Yeh kis jaga pe hua?					
Q229.What time was it? Waqt kya tha?					
Q230.Do you think it could be prevented? Kya app isko rok sakti theen?	1.Yes	2.No			
Q231.How did you respond to the incident? Apnay iska samna kaisay kiya?					
<i>Did you suffer any of the following due to SH:</i>					
Q232.Repeated, disturbing memories, thoughts, or images of the attack? Kya apko iss hadsay k baad baar baar buray khaylat ya yaadain pareshan kerti hain?	1.Yes	2.No			
Q233.Avoiding thinking about or talking about the attack or avoiding having feelings related to it? Kya app iss hadsay ko bhulanay ki koshih ya iskay baray mein baat kernay se guraiz kertay hain?	1.Yes	2.No			
Q234.Being "super-alert" or watchful and on guard?	1.Yes	2.No			

Kya app chak o chawbund rehtay hain?					
Q235. Feeling like everything you did was an effort? Kya apko zehni dabao mehsoos hota hai?	1. Yes	2. No			
<b>Racial Harassment (RH) at the workplace</b>					
Q236. In the last 12 months, have you been racially harassed in your workplace/ when you are working outside of home? Pichlay 12 maah mai apki zaat ki waja se kisi ne apko harasaan kiya hai?	1. Yes	2. No			
Q237. How often have you been racially harassed in the last 12 months? Kitni dafa?	1. Daily	2. About once in a week	3. About once in a month	4. Other	
Q238. Is this a typical incident at your workplace/ when you are working outside of home? Ghar se bahir kaam pe kya ye aam ma'mool ki baat hai?	1. Yes	2. No			
Q239. Who attacked you? Kis ne harasaan kiya?					
Q240. Where exactly did it take place? Kahan					
Q241. What time was it? Kis waqt?					
Q242. Do you think it could be prevented? Kya issay roka ja sakta tha?	1. Yes	2. No			
Q243. How did you respond to the incident? Iske natijay mai aap ne kya kiya?					
<i>Did you suffer any of the following due to RH:</i>					
Q244. Repeated, disturbing memories, thoughts, or images of the attack? Tashadud ke bad kya apko iske baray mai aksar khayalat atay the?	1. Yes	2. No			
Q245. Avoiding thinking about or talking about the attack or avoiding having feelings related to it? Kya is tashadud ke baray mai baat karne se ap ghabrati thi?	1. Yes	2. No			
Q246. Being "super-alert" or watchful and on guard? Tashadud ke bad dar ke rehne lagi?	1. Yes	2. No			
Q247. Feeling like everything you did was an effort? Har kaam mushkil ho gaya?	1. Yes	2. No			
<b>SECTION F OPEN-ENDED QUESTIONS</b>					
Q248. What are the main health challenges you face in the last 12 months?  Pichlay sal mein kaunsi sehat ki takleef thi apko? Behtareen tibbi saholiyat ke wasool mai sub se eham 3 rukawatain?					
Q249. What are the top 3 barriers preventing you from access to health services?  Kaunsi theen chezey apko sehat ki sahat laney mein rukawat hai					

<p>Q250. What are the main problems which prevent you from being satisfied with your health since taking loan? Kaunsi sehat ke mutalik cheezay apko ----- ?</p>		
<p>β- Punjabis (1), Pashtuns (2), Sindhis (3), Siddis (4), Saraikis (5), Muhajirs (6), Balochis (7), Hindkowan (8), Chitralis (9), Gujarati (10), Kashmiris (11), Kalash (12), Burusho (13), Brahui (14), Khovar (15), Hazara (16), Shina (17), Kalyu (18), Balti (19), Afghan refugees (20), Other (21).</p> <p>*- Doctors clinic (private/primary-secondary) (1), Hospital Clinic (tertiary) (2), LHW (3), BHU (4), Local Hakim (5), Homeopath (6), Other (7).</p> <p>+ No money (1), not serious/ took care it of it myself (2), too busy (3), no childcare (4), no transport (5), too embarrassed (6), don't have permission (7), prescription/ paperwork/ referral got lost (8), didn't know where to get care (9), provider too far away (10), don't like the local provider (11), couldn't find specific specialist (12), other (13).</p> <p># Physical violence refers to the use of physical force against another person or group, that results in physical harm, sexual or psychological harm. It can include beating, kicking, slapping, stabbing, shooting, pushing, biting, and/or pinching, among others. Psychological violence is defined as: Intentional use of power, including threat of physical force, against another person or group, that can result in harm to physical, mental, spiritual, moral or social development. Psychological violence includes verbal abuse, bullying/mobbing, harassment, and threats. Sexual Harassment refers to any unwanted, unreciprocated and unwelcome behavior of a sexual nature that is offensive to the person involved, and causes that person to be threatened, humiliated or embarrassed. Racial Harassment refers to any threatening conduct that is based on race, color, language, national origin, religion, association with a minority, birth or other status that is unreciprocated or unwanted and which affects the dignity of women and men at work.</p> <p>@ took no action (1), tried to pretend it never happened (1), told the person to stop (1), tried to defend myself (1), told friends/family (1), sought counseling (1), told a colleague (1), reported it to a colleague (1), discussed/ complained to MF loan officer (1), sought help from MFP (1), sought help from the union/community (1), pursued prosecution (1), other (1)</p>		