

The impact of microfinance programmes on access to health care, knowledge to health indicators and health status among women in Moshi, Tanzania

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Abstract

Background: Microfinance Institutions (MFI) award small loans and women are the primary target. Whilst much literature has explored and acknowledged its impact on poverty alleviation and gender equality few studies have examined whether the added income also improves health outcomes to program clients. This study examined the association between participation in MFI programmes and wellbeing of clients and their family members via social determinants of health in Moshi, Tanzania.

Methods: Cross-sectional data among non-elderly women were collected between October and December 2011. Multistage random sampling technique was employed to obtain study participants. The primary predictor variable was participation in MFI programs while the outcome measures were: odds of facing exclusion to health care, knowledge to health indicators related to health promotion, and self-assessed health status. A questionnaire was used to collect extensive data on demographic and socioeconomic information of the study participants.

Results: A total of 900 women participated in the study. Program participation was found to be associated with increasing age ($p < 0.001$), increasing number of living children ($p < 0.002$) and level of income ($p < 0.001$). We found no association between program participation and access to health care, knowledge to health indicators related to health promotion and self-assessed health status. Only one out of seven indicators (14.2%) was significantly associated with MFI participation and access to health care. Two out of six (33.3%) health indicators showed association to MFI programme participation, while only 3 out of 15 (20%) dimensions measured in self-assessed health status showed significant association to MFI programme participation.

Conclusion: These findings indicate that MFI programme participation is not associated with improved health outcomes of clients and their family members in Moshi. Strategies are needed to enhance the health-promoting capacity of MFI programmes in Moshi as shown elsewhere.

Keywords: microfinance, access, health care, women, Tanzania

Introduction

Poverty and health inequalities are inextricably linked. Poverty impacts on individuals' health, including the ability and opportunity to engage in health-seeking and health promoting behaviour (Pronky *et al.*, 2007). Microfinance is one example of an intervention that can give a considerable impetus through poverty reduction and its associated vulnerabilities including the fundamental determinants of health disparities (WHO, 2008). The relationship between social determinants of health and health is known to contribute to health disparities such that people with a lower socioeconomic status experience poor health (Marmot, 2007). Most often women with low education attainment and minimum levels of self-esteem living in exploitative conditions are less likely to seek out preventive health care and acquire better health (Wamue-Ngare & Njoroge, 2011). According to Wamue-Ngare & Njoroge (2011), this intertwining is more prevalent in the low-income

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countries where women have repressive social relationship within rigid and hierarchical social structures.

Policy makers have consistently called upon for interventions to improve socio-economic status as means to address the fundamental determinants of health disparities. Responding to the call, a significant development has been triggered of community based organizations and initiatives at the local level to improve the socioeconomic status of the disadvantaged populations. These self-help programmes in the form of saving and credit popularly known as microfinance programmes, have succeeded in changing their lives, enhancing incomes and generating other positive externalities (Ahmed, 2009). Microfinance Institutions (MFI) award small loans and women are the primary target based on theoretical assumption that they are more likely to be credit constrained than men, have restricted access to the wage labour market, have an inequitable share of power in household decision-making, too poor or remotely located to take advantage of traditional financial services and that they lack capital to invest in their business which could allow them to improve their family living standard (Woller, 2001; Yunus, 2002). Participation in MFI can improve socioeconomic status by improving economic wellbeing and addressing fundamental determinates of health disparities among women (Marmot *et al.*, 2008).

To date the main drive of research in the field of microfinance has been in relation to its effect on poverty alleviation, gender equality or financial control within the lending institutions (Sigalla & Carney, 2012). Whilst much literature has explored its impact on poverty and gender, few studies have examined whether the added income also improves wellbeing of the clients. Furthermore, the few studies exploring the MFI and health link have reported mixed results. A study from India (Mohindra *et al.*, 2008) found no association between programme participation and self-assessed health. In the Dominican Republic, Dohn *et al.* (2004) reported an improvement in health knowledge and dietary quality with no changes in anthropometric measures. But other studies have contended that MFI have been associated with improved health outcomes of clients. For example, Mohindra *et al.* (2008) found lower levels of emotional stress among MFI clients compared to non-clients. Smith (2002) found improved maternal and child health while Doocy *et al.* (2005) showed a positive impact on the nutritional status of participants and their families.

Unlike other developing countries like Pakistan and Bangladesh (Khandker, 2005; Pitt & Khandker, 1998; Goetz & Gupta 1996; Mohindra *et al.*, 2008), where the potential of MFI has been extensively explored, little evidence exist in the cultural and political context of Tanzania despite the growth of the programmes (Kessy *et al.*, 2015). This study aimed to explore the impact of participation in MFI programme on access to health care, knowledge to health indicators related to health promotion and self-assessed health status to programme participants and their family members via social determinants of health.

Material and Methods

Study site and design

This cross-sectional study was conducted from October-December 2011 in Moshi Urban district, northern Tanzania. Moshi has a projected population of about 200,000 (URT, 2013) living in around 33,910 households with 40% of the population living below the poverty line (i.e. living below US\$ 1 per day). The district is sub-divided into 15 wards of which 5 are regarded as urban and 10 as peri-urban. The study was conducted in the peri-urban area that has high population density with limited access to formal financial institutions - an area where more than 50 microfinance institutions (MFI) were operating.

Study population and sampling

The population for this study included women aged 18–60 years who were residents of Moshi irrespective of their MFI programmes membership status. We excluded women who were not permanent residents of Moshi and those who did not give a written consent. Sample size estimation and sampling procedure for this study have been described elsewhere (Kessy *et al.*, 2015). It was estimated using computer software EpiCalc 2000 accounting for the national financial accessibility which covers about 40% (Fin Scope Survey, 2009) with 5% significance level and 80% power, the minimum sample size was estimated to be 900 women. Selection of study participant's involved the use of multistage random sampling technique. The first stage randomly selected five out of ten peri-urban wards. Thereafter random selection of three neighbourhoods from each of the five wards was conducted, giving a total of 15 neighbourhoods. All women meeting the eligibility criteria in households of the selected neighbourhoods were invited to participate.

Data collection

Face to face interviews were conducted with consented women by trained research assistants. A questionnaire was used to collect information on social-demographic characteristics, socio-economic status and on MFI participation status. Detailed information about microcredit programmes were obtained on type of women enrolled, financial and non-financial services received, payment schedule and conditions attached to the credit. Information on perceived advantages and challenges in using such programmes were also collected. Questions on key variables were the same as those used in the Tanzania Demographic and Health Survey (TDHS, 2011). Pre-testing of the data collection tool was conducted in wards which were not part of the study sites but with comparable characteristics.

Six health indicators related to health promotion and exclusion time to health care during a one year period prior to the study were used as proxy for better health outcomes. Health indicators related to health promotion included *three questions* on knowledge and *three questions* on health behaviours. Exclusion to health care was determined by enquiring about barriers at household level that resulted into failure to utilize health care. Eight situations were explored in which household members were forced to fail to access health care. Exclusion was defined as at least one situation over the past 12 months of failure to access medical services to any of the followings; a sick child, a sick adult, an elderly member, a family member, a failed or delay in hospitalization/ surgery or of family members

Health achievement was self-assessed using 15Dimension (15D) instrument- a generic, comprehensive, 15-dimensional, standardized, self-administered measure of health-related quality of life (HRQoL) developed by Sintonen (2001). Respondents were interviewed on the 15 dimensions to self assess and rate their physical, mental and social aspect of health. Each dimension has 5 levels by which more or less of the attributes are distinguished and respondents were asked to choose the level which best describes their present health status. A single index score on a 0–1 scale is used to calculate and represent the respondents HRQoL profile on each dimension. A maximum score of 1 means no problem while a score of 0 equals to being dead.

Data analysis

Questionnaires were checked for completeness and consistency on daily basis during data collection period. Data were entered, cleaned, and analysed using Statistical Package for Social Sciences Version 22 (IBM Corp, NY). Frequency and Proportions were used to summarize category data whilst median and range were used to summarize continuous data, chi-square tests was used for bivariate comparison between categorical variables. Adjusted Odds Ratio (AOR) with their corresponding 95% CI was used to calculate the strength of association between knowledge to health indicators and dependent variable while 15 D self-assessed participants' health. Logistic regression analysis was used to determine independent predictors of programme participation and various aspects of women wellbeing. The p -value was two tailed, and value of less than 0.05 indicated the statistical significance of the findings.

Ethical considerations

The study was ethically approved by research and ethical committees of Kilimanjaro Christian Medical (KCM) University College of Moshi Tanzania (ethical clearance. No 303) as well as from regional ethical committee of South East, Norway (REK No 2011/1358). Permissions to conduct the study were granted by Moshi Municipal Director. Informed written consent was obtained from the participants after the researchers explained the purpose of the study. Participants were informed of their right to refuse participation in the study and were assured of the confidentiality of the collected information by assigning unique identification number.

Results

Baseline characteristics of the respondents

Out of a total of 1100 women approached 900 gave written consent and participated in the study giving a response rate of 81%. The median age of the participants at enrolment was 36 years, ranging from 18-60 years. Among them, 766(85.1%) had primary education, 644 (71.7%) were married or cohabiting, 829(92%) had no formal employment, 296 (40.2%) were low income earners (below \$1 per day) 540(63%) lived in household with 3-5 members and 455 (52.0%) had more than 2 living children. A total of 346(38%) were clients of the MFI programme (participants of MFI). Programme participation was found to be associated with increasing age ($P<0.001$), increasing number of living children ($P<0.002$) and level of income ($P<0.001$). Furthermore programme participation is found high (57.7%) in middle income group (US\$ 30-100 per month equivalent 1-3 USD per day) compared to low income group (32.8%) who earned less than US\$30 per month (Table 1).

Table 1: Socio-demographic characteristics of women by participation status in microfinance programmes in Moshi urban (N=900)

Characteristics	Response	Participation status			n	P-value
		Total	Clients n (%)	Non-clients (%)		
Age in years (n=886)	≤ 19	31	2 (6.5)	29 (93.5)	<0.001	
	20 – 29	223	60 (26.9)	163 (73.1)		
	30 – 39	303	115 (38.0)	188 (62.0)		
	40 – 49	223	113 (50.7)	110 (49.3)		
	50 - 59	106	53 (50.0)	53 (50.0)		
Education (n=900)	Never attended	29	7 (24.1)	22 (75.9)	0.084	
	Primary level	766	294 (38.4)	472 (61.6)		
	Secondary level	92	38 (41.3)	54 (58.7)		
	Higher	13	7 (53.8)	6 (46.2)		
Marital status (n=898)	Married/cohabiting	644	246 (38.2)	398 (61.8)	0.097	
	Separated/widow/divorced	167	73 (43.7)	94 (56.3)		
	Single	87	26 (29.9)	61 (70.1)		
Monthly income in US\$ (n=737)	<30	296	97 (32.8)	199 (67.2)	<0.001	
	30 - 100	298	172 (57.7)	126 (42.3)		
	>100	143	61 (42.7)	82 (57.3)		
Number of living children (n=875)	0	19	4 (21.1)	15 (78.9)	0.002	
	1 – 2	401	134 (33.4)	267 (66.6)		
	3 - 4	299	129 (43.1)	170 (56.9)		
	More than 5	156	69 (44.2)	87 (55.8)		
Number of households (n=857)	1 – 2 people	85	27 (31.8)	58 (68.2)	0.091	
	3 – 5 people	540	206 (38.1)	334 (61.9)		
	More than 5	232	110 (42.0)	152 (52.0)		

Microcredit participation and access to care

Only one indicator describing access to surgical care was significantly associated with MFI participation (Table 2). A high proportion of programme participants (66.7%) who had a family member recommended for surgery in the past six months failed to obtain the service ($P=0.032$). Other indicators; sick child failed to obtain care ($p=0.422$), sick adult failed to obtain care ($p=0.155$), sick elderly failed to obtain care ($p=0.279$), member with chronic illness failed to obtain care ($p=0.469$) and family member failed recommended hospitalization ($p=0.120$), were not significantly associated with programme participation.

Table 2: Participation in microfinance programmes and its association with access to care during the past six months (N=900).

Items	Total	Participation in MFI		χ^2	P-value
		N (%) [*]			
		Non-clients	Client		
Any sick child failed to obtain health care	28	15 (2.7)	13 (3.8)	0.629	0.526
Any sick adult failed to obtain health care	39	20 (3.6)	19 (65.5)	2.025	0.155
Any sick elderly member failed to obtain health care	27	13 (2.4)	14 (4.1)	1.171	0.279
Any person with chronic illness failed to obtain health care	25	16 (2.9)	9 (2.6)	0.524	0.469
Any family member was recommended a hospitalisation but failed to obtain such care	18	14 (2.5)	4 (1.2)	2.416	0.120
Any member was recommended a surgery but failed to be obtain such care	15	5 (0.9)	10 (2.9)	4.583	0.032

*Column percent

Microcredit participation and health knowledge

As shown in table 3, Programme participation was found to be associated with increase in health knowledge in preparation and use of Oral Rehydration Salt (ORS) and knowledge on breast cancer and importance of self-examinations only. The MFI clients had 2.17 folds increase odds of being knowledgeable on stages of ORS preparation and duration for use after being prepared compared to non-clients (OR=2.17 95% CI, 1.10-4.62). Furthermore, MFI clients had 1.37 folds increase odds in knowledge on breast cancer and importance of self-examination compared to non-clients (OR=1.37, 95% CI, 1.01-1.86). Despite not significantly associated with MFI participation, clients had 38% less odds of being knowledgeable on hand washing compared to non-clients (OR=0.62, 95% CI, 0.08-4.67).

Microcredit participation and participants self-assessed health using 15D

As shown in table 4, we found no significant difference in association between clients and non-clients in self-assessed health status scores in most of the dimensions asked, both respondents scored high with no significance different between the two groups; 13 out of 15 (87%) of the dimensions explored revealed the respondents (both clients and non-clients) to have no problems with no significant difference. Only in three dimensions(20%); Mobility 96.6 % vs. 89.9% (p -value 0.001), Vision 93.1% vs.89.9% (p -value 0.001) and Discomfort 98.4 % vs. 91.4 % (p -value 0.001) clients scored higher but with significant difference compared to non-clients.

Table 3: Distribution of respondents according to knowledge on health indicators related to health promotion by participation in MFI

Health indicator	n	Clients, n(%)	Non-client, n(%)	AOR (95%CI)
Reasons for water purification (n=882)	871 (98.8)	338 (97.7)	533 (96.2)	2.85 (0.59-27.27)
Stages of ORS preparation and duration for use after being prepared (n=885)	803 (93.9)	324 (93.8)	479 (86.4)	2.17 (1.10-4.62)
Signs of a sick child (n=881)	873 (99.1)	338 (97.6)	535 (96.6)	1.05 (0.20-6.82)
Hand washing (n=896)	890 (99.3)	341 (98.5)	549 (99.1)	0.62 (0.08-4.67)
Cervical cancer and pap smear test (n=842)	101 (12.0)	41 (11.9)	60 (10.8)	1.05 (0.67-1.64)
Breast cancer and the importance of self-examination (n=844)	871 (98.8)	327 (94.5)	474 (98.2)	1.37 (1.01-1.86)

*Column percent

Table 4: Self-perceived health by dimension and participation by percentage in MFI (N=900)

EQ 15 dimension		Participation status		MFI	P-Value
		Non participates (non-clients)	Participate (clients)		
Mobility	No problem	89.9	96.6	0.001	
	Any problem	10.1	3.4		
Vision	No problem	82.6	93.1	0.001	
	Any problem	17.4	6.9		
Hear	No problem	99.1	99.5	NS	
	Any problem	0.9	0.5		
Breathing	No problem	97.1	99.3	NS	
	Any problem	2.9	0.7		
Sleeping	No problem	98.8	98.9	NS	
	Any problem	1.2	1.1		
Eating	No problem	100.0	99.6	NS	
	Any problem	0.0	0.4		
Speech	No problem	100.0	100.0	NS	
	Any problem	0.0	0.0		
Elimination	No problem	100.0	99.5	NS	
	Any problem	0.0	0.5		
Usual activity	No problem	99.1	99.1	NS	
	Any problem	0.9	0.9		
Mental function	No problem	99.4	99.3	NS	
	Any problem	0.6	0.7		
Discomfort	No problem	91.2	98.4	0.001	
	Any problem	8.8	1.6		
Depression	No problem	96.5	97.3	NS	
	Any problem	3.5	2.7		
Distress	No problem	97.1	98.0	NS	
	Any problem	2.9	2.0		
Vitality	No problem	98.8	99.5	NS	
	Any problem	1.2	0.5		
Sexual activity	No problem	98.8	99.1	NS	

Discussion

Three outcome measures were used in this study: odds of facing exclusion to health care, knowledge to health indicators related to health promotion, and self-assessed health status. Contrary to previous studies majority of primary outcome measures showed null associations between MFI programmes participation and client's health outcomes via social determinants of health. In exclusion to health care, all but one indicator- in the past six months any member in the family was recommended a surgery but failed to obtain such care - was significantly associated with programme participation. Programme participation was found to be significantly associated to access to surgical care with non-participants more likely to be denied surgical care compared to participants. In other indicators programme participation was found not to be significantly associated with access to care, although there was a tendency for a positive association for hospitalization and sick adult care variables. Our results are contrary to those from previous studies such as the one published by Mohindra *et al.* (2008). The latter used similar indicators and found MFI to be significantly associated with odds of exclusion to health care. This can be attributed to a well-established primary health care system in Moshi Urban which is available to majority of the population at not more than a kilometre from their home and at affordable cost with minimal barriers to access to care. Furthermore, Moshi urban has high percentage coverage of community based insurance schemes which comprehensively cover for majority of common health conditions except for those with high cost including surgery.

In knowledge to health indicators related to health promotion, contrary to results of previous works such as of Dohn *et al.* (2004) and Doocy *et al.* (2005) we found null association between clients and knowledge to health indicators. In our study both clients and non-clients scored high irrespective to programme participation status. In their study, Dohn and colleagues found improvement in all three communities examined with highest changes in communities which had parallel microcredit and health programmes. Absence of other structure intervention such as health and health education in the MFI programme or in nearby communities in Moshi (Kessy *et al.*, 2015), might have undermined the potential effectiveness of the intervention. Most of the studies with positive association with MFI programmes participation have components of either education or health in their programmes to maximize MFI health-promoting capacity (Pronyk *et al.*, 2006; De La Cruz *et al.*, 2009). Null association was also observed in self-health assessment using the 15 D instrument. Self-selection of participants to MFI programmes who are not old, sick, physically or mentally handicapped may result in having a limited effect on 15 D tool.

Limitation to our study are related to its design, that is being a cross sectional study it may lack robustness in results. The design is also liable to placement bias and self, peer, and lender selection of participants (Pitt & Khandker, 1998). Cross sectional studies suffer selection bias as they compare clients to non-clients whom may differ in unobserved ways such as motivation or sense of entrepreneurship. A randomized controlled trial study could have been ideal. However, there are also difficulties in this because of high penetration of microcredit programmes intervention in our settings which may containment the results (Banerjee *et al.*, 2009). Another limitation was the reliance to self-assessed health status, as previous studies have shown that they are susceptible to perception bias (Sen, 2002).

Despite the positive achievements and the promising potentials of MFI shown elsewhere, programme participation was shown not to be associated with improved health outcomes to programme participants and their families in Moshi, Tanzania. Non-integration of a health and health education components in existing programmes can be highlighted as a limitation factor to the health-promoting capacity of MFI programmes in Moshi. However, the programmes remain a powerful strategy for attaining better health outcomes as shown elsewhere if complemented to synergize its effectiveness. Access to financial services is undeniably important to the poor, but it

has been shown in Moshi to be insufficient on its own to address the multi-dimensional challenges of poverty including poor health. MFI in Moshi require policies and strategies that will facilitate and enforce integration of health and health education components into their designs to maximize their health-promoting capacity.

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