Factors affecting ability and willingness of community members to enrol Improved Community Health Fund in Dodoma and Iringa regions

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ABSTRACT
Financial protection has been recognised as an important element within the healthcare financing system of many low and middle-income countries. Pre-payment schemes have been advocated as a means of curbing high out of pocket expenditure and achieving universal health coverage. A number of financing reforms have been taking place, however there is a limited rigorous contextual evidence on the willingness-to-pay (WTP) for the recently Improved Community Health Fund (iCHF) in Tanzania. The study took place in district councils of Dodoma and Iringa regions. Data were collected from a household survey conducted in 2021. Contingent valuation methodology was used to elicit households' the willing to pay (WTP) for iCHF premium using the bidding game technique. In addition, the relationship between WTP and other socio-economic variables was examined using logistic regression models. Majority 88% respondents said they will repay their package after expiry considering the quality of the services provided by health insurance. The results showed a statistically significant negative relationship 0.526 ($p = 0.034$) between household aged above 55 years of age and WTP. More specifically, as age increases above 55 years, the likelihood to pay for health insurance premium decreases. We also found a positive statistically significant relationship 1.882 ($p = 0.034$) between the household with small business and WTP, which suggest the individuals with small business are in a better position to pay for iCHF premium compared to those with formal employment. It is important to

educate the households to raise awareness about the benefits of being a member of insurance scheme in both formal and informal sector. The households should be encouraged to formalize their small business, this will improve their income and enrolment into the insurance schemes. The benefit packages should be revised to fit the need of the people as WTP was also influenced by the nature of the packages.

Keywords: *Insurance, willingness to pay, insurance premium, Tanzania*

INTRODUCTION

Globally, health insurance is considered a promising means for achieving universal health-care coverage (UHC) (WHO, 2010). In particular community-based health insurance schemes are becoming increasingly recognized as a potential strategy to achieve UHC in developing countries. The UHC promotes preventive, curative, and rehabilitative health interventions at an affordable cost to achieve equity in accessing health services. Achieving UHC among other things needs an efficient and equitable financial collection from health insurance members contributing to one pool and using such contributions to provide or purchase health services, and hence the risk of paying for health services once needed is shared by all and not borne by each person in the invent of illness (Paul, *et al*., 2019).

There are various categories of health insurance in Low- and Middle-Income countries including public managed schemes such as National or Social Health insurance (NHIF) and Community Based Health Insurance (CBHI) and Private Health Insurance (PHI) schemes. Enrolment in some of these schemes is mandatory for a specific segment of the population. The PHI is a voluntary insurance mechanism based on individual risk assessment and the CBHI is a voluntary, non-profit health insurance scheme that is organized and managed at the community level (Kigume & Maluka, 2021). The prepaid health financing mechanism is adopted by many countries especially poor countries to counteract the negative effects resulting from the implementation of user fees introduced in the system of health services provision, which leads to inhibition of utilization of health care, particularly for marginalized populations, and sometimes lead to catastrophic health expenditures in turn (Woldemichael, et al., 2019).

Tanzania like any other developing countries, has established different insurance mechanisms to improve health care services among its

population. The NHIF was established in 1999 by the Parliamentary Act, CAP. 395 and started to operate in 2001 as a purchaser of health services for public sector servants paying 6 percent to the Fund; (3 percent of monthly salary deduction from employee and another 3 percent contribution from the employer) remitted to the Fund in advance before utilization of health services from either public or private health facilities (Lee *et al.,* 2018). In 2001, the government also established a Community Health Fund (CHF) by Parliamentary Act, Cap. 409 as a prepaid scheme to be managed in 184 Local Government Authorities (LGAs) to address the social protection challenges, especially in the informal sector, as a result of the introduction of a cost-sharing policy. In implementing the CHF, every LGA had a different annual contribution rate (premium) ranging from TZS 5,000 to TZS 10,000 per household of 6 members (Maluka & Bukagile, 2014). However, in recent years, the CHF has been transformed into an improved CHF (iCHF) by removing some challenges such as immobility of services which persisted in the former CHF with an annual contribution rate being increased and fixed to TZS 30,000 across all LGAs countrywide (Kigume and Maluka, 2021; Kapologwe et al*,* 2017). Despite that user fee policies have contributed towards bridging of resources gap for health facilities to a certain level, and led to some improvements in the delivery of quality services in some settings, it has caused a strong barrier to health care for many poor households that are normally excluded from formal social security systems on the other hand (Watson et al., 2016).

Regardless of of such efforts taken so far, still the government is far from achieving the Universal Health Coverage (UHC) due to a small population that is currently granted with access to health services as only few people are currently under health insurance coverage. To date, out of the country population (57,637,628) (Mwakisisile & Mushi, 2020) only 8 percent is enrolled with NHIF, 5.4 percent is covered under CHF, 0.3 percent covered by SHIB (NSSSF) and 1 percent being enrolled under private health insurance companies (Kibambo, 2021). This leads to the total of 14.7 percent as country coverage. Thus, leaving approximately 85.3 percent of all Tanzania's total population out of health insurance system, implying that the country has still a long way to go in achieving universal health coverage. In this case, more people are likely to face financial barriers and fail to access health services and care when needed.
Available evidence indicates that economic factors are among the factors contributing to the poor enrolment of people into the established health insurance scheme. In this regard, scholars have raised concerns over

people's ability and willingness to pay for the health insurance packages, information, price, and quality (Bolarinwa et al., 2020; Ogundeji *et al*., 2019). However, the studies that have been conducted focusing on Community-Based Health Insurance (CBHI) indicate mixed findings. While some indicate that socio-economic status is positively associated with willingness to pay whereas the rich were found to be more willing to pay for CBHI than the poor (Haile et al., 2014), other studies indicate that the rich in rural areas were significantly less willing to pay for CBHI than the poor (Oriakhi & Onemolease, 2012; Bukola, 2013). Nevertheless, some studies indicate that there is no association between wealth and willingness to join a CBHI program (Eckhardt, et al., 2011) but point out other factors such as education level whereas those who are more educated in the rural areas were less willing to join CBHI scheme than the poor due to low-quality services offered through the schemes.

Previous studies conducted in Tanzania indicate that inadequate benefit packages have been reported to be among the reasons for low enrolment or dropout for members of health insurance (Ajuaye et al., 2019). Household enrolment decision into the health insurance scheme has been reported to be influenced by household social-economic and demographic factors, health insurance knowledge and its benefit in accessing healthcare services, individual willingness and ability to pay for annual premium amounts set by the respective insurance schemes (Macha et al., 2014). In different settings, factors such as the design of the schemes and accountability-management issues, annual premium rates, methods of premium collection, and benefits packages, have been reported to affect household enrolment to the schemes (Mladovsky et al., 2015).

Low membership enrolment and retention into the schemes have been linked to the voluntary nature of the community health insurance schemes (Kigume & Maluka, 2021). The government of Tanzania is planning to go for mandatory health insurance after revising some of the bottlenecks (such as portability of the services, enrolment points, provider-purchaser relationship) associated with the previous community health fund. Failure to enrol in healthcare insurance in developing countries is contributed by two basic aspects of poverty as pointed out by Sachs (2012). Firstly, in the low-income economy, many households do not have the means to pay for annual insurance premium, and secondly, the governments in these countries often lack adequate domestic budget revenues to ensure universal access to a basic package of health services for the poor even if the government is willing to guarantee universal access to health care.

Macha et al., (2014) conducted a study to assess the determinants of community health fund membership in Tanzania by using mixed methods analysis found that the three middle income quintiles were more likely to enrol in the CHF than the poorest and the richest. The poor rather than the poorest were more likely to join as were large families and of greater risk of illness, with disabilities or persons with chronic diseases. It was also revealed that households with elderly members or children under-five years were also more likely to enrol. In addition, poor understanding of risk pooling discouraged people from joining or renewing the scheme; and poor quality of public care services, the limited benefit package and a lack of provider choice were the main factors for low enrolment.

In Tanzania only one study has assessed community willingness and ability to pay for insurance premiums in Tanzania (Kuwawenaruwa et al., 2011). The authors used a cross-sectional household survey of 2008 and found that few households were willing and able to pay higher premium rates even with the expanded benefits package for the previous (old) community health fund in Tanzania. However, there is no up-to-date study that has assessed willingness and ability to pay for the current improved community health insurance fund in Tanzania.

METHODS

The study area

The study was conducted in Bahi, Dodoma Municipal and Mpwapwa in Dodoma region and Iringa Municipal, Kilolo and Mufindi from Iringa region in 2021. The health insurance coverage informed the selection of the two regions (Dodoma and Iringa). Dodoma region had the highest iCHF insurance coverage of 4 percent while Iringa region had the lowest iCHF coverage of about 1 percent (URT, 2021). The iCHF had been implemented in Dodoma region since 2013 while the other region started implementing iCHF in 2018.

Study design

This was a cross-section study in which a structured questionnaire was deployed to capture information on households' demographic characteristics, household iCHF membership, willingness to pay (WTP) for iCHF and household ownership of assets. Qualitative research methods were employed to capture in-depth information from iCHF beneficiaries and key informants regarding the factors influencing community members' ability and willingness to pay for iCHF.

Study population

The study population consisted of health insurance scheme beneficiaries, non-beneficiaries, health service providers, district and regional level healthcare managers. Inclusion criteria was that, any insurance member who had been enrolled in the scheme for not less than six months, household head/assistant and aged 18 and above. While for non-health insurance beneficiaries we included any household head/assistant and aged 18 and above. All who met inclusion criteria and consented to participated were included.

Sampling

This study was conducted alongside a bigger study undertaken by the Ministry of Health which specifically looked at knowledge, attitude and practices of beneficiaries, non-beneficiaries and healthcare providers on the existing insurance schemes; and factors affecting the community choice for a defined health insurance package. A multistage cluster sampling was adopted through selection of regions, districts and wards. Furthermore, a total of 10 regions were selected randomly across the geographical zones in the country (Dodoma, Dar es Salaam, Kagera, Mwanza, Kilimanjaro, Mbeya, Iringa, Ruvuma, Mtwara and Tabora). In each region three districts were also selected randomly making a total of 30 district councils (Bahi, Dodoma, Mpwapwa DC, Kigamboni MC, Ubungo MC, Kinondoni MC, Biharamulo DC, Bukoba, Karagwe DC, Ilemela DC, Magu DC, Misungwi DC, Moshi DC, Moshi MC, Rombo DC, Mbarali DC, Mbeya CC, Kyela DC, Iringa MC, Kilolo DC, Mufindi DC, Songea MC, Mbinga DC, Songea DC, Mtwara MC, Nanyumbu DC, Masasi DC, Tabora MC, Uyui DC, Nzega DC). A multistage cluster sampling approach was further used to select the wards included in the study. At the ward level a roster of all the household was obtained from the leaders, and those with and without insurance were identified. Thereafter, a random selection of the households was done and invited to take part in the study. Sample size was calculated to ensure large and enough representation of the beneficiaries. Estimated proportion of respondent with ability to pay 3,940.23 Tanzanian shilling per month to cover health insurance which was 65%; Z=1.96; value of standard normal distribution at 95% confidence level and a margin of error “e” = 2.54%; design effect of 2.0; and a non-response rate of 20%. The above statistical parameters were opted based on a factor of available resources as per recommendation in the document titled “Practical Issues in Calculating the Sample Size for Prevalence Studies” (Ogundeji, Akomolafe, Ohiri, and Butawa 2019). With the above statistical parameters, a sample size of

3,570 (n=625 beneficiaries and 2,945 non-beneficiaries) (URT, 2021). In this particular analysis, two regions (Dodoma and Iringa) were purposively selected based on iCHF enrolment. A sub-sample of 118 beneficiaries and 538 non-beneficiaries was drawn and used for analysis of the research objective in this study (Table 2).

Data collection and management

A structured questionnaire was used to collect primary data. Among the variables collected using these tools included information for assessing household social economic status (SES), knowledge on, attitude and practices towards health insurance scheme and social-demographic characteristics. The questionnaire captured information on beneficiaries and non-beneficiaries' demographic characteristics, accessibility to health services; health-seeking behaviour, household ownership of various assets and practices towards health insurance scheme. The tools were programmed into, and administered using, Android tablets using Open Data Kit (ODK). Data were stored on password-protected laptops, with restricted access to questionnaires and data by researcher only. Systematic routines were developed to check for data entry discrepancies, range, and consistency. All discrepancies were resolved by reference to the original checked data collection forms. Interview guides that were developed in English and then translated into Kiswahili were used to capture qualitative information from the iCHF beneficiaries and key informants (healthcare providers, district and regional level healthcare managers) to triangulate with the quantitative information collected. All interviews were recorded.

Data analysis

Descriptive statistics

To assess the ability to pay the households' expenditure-income ratio approach was used to estimate the ability of the respondent to pay the iCHF amount willingly We utilized a 5-10 percent health expenditure-income ratio based on evidence from developing countries considering impoverishment effects due to out-of-pocket payments when accessing healthcare services. Furthermore, a bivariate analysis (the t-test and chi-square test of association) was done to assess the level of association between the ability to pay and willingness to pay amounts. Statistical significance was examined using Pearson chi-square (for binary or categorical variables) and the Mann-Whitney U test for continuous variables.

Empirical strategy

In this study, health care access and utilization is defined as binary (1= if a household accessed healthcare services for the past three months before the survey, 0 if otherwise). Theoretical model presented in equation 1 below.

$$Y(1/0) = \alpha + \beta_{ij}X_{ij} + \cdots\cdots\cdots\cdots\cdots + e \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

A logistic model was used to assess the community's willingness and ability to pay for iCHF. Equation: empirical Model of willingness to pay for Health insurance (Model 2, 3):

$$WTP = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots \beta_n X_n + \mu \ldots. (2)$$

$$WTP = \alpha + \beta_1 Age + \beta_2 Satisfaction + \beta_4 income + \cdots\cdots\cdots\cdots\cdots + \beta_n X_n + \mu \ldots. (3)$$

the dependant variable for the logit model will be binary (1= willing to pay for health insurance, 0= not willing) while α, will be the intercept; β, are coefficients of explanatory variables X (such as age, satisfaction with health insurance, household income etc); and u is the error term. computation of marginal effects on logit models will be undertaken (See Annex 3, possible exogenous variable and endogenous variables).

Qualitative data analysis

Qualitative data was analyzed using content analysis. All audio recorded in-depth interviews were transcribed within 48 hours of the interview to allow a follow-up of any issues arising from the previous interviews. The data was coded using Nvivo 12 QSR International software. Then themes and categories depending on the research questions were drawn from the dataset. The patterns from the data helped in identifying unique quotes, compiling the data and summarizing them according to the research questions. The results are presented in the narratives, descriptive and explanatory forms.

Consent and ethical approval

The permission to undertake the study was obtained from the National Institute for Medical Research (NIMR) reference number NIMR/HQ/R.8a/Vol.IX/3653. The proposal was submitted to the ethics committee of the Open University of Tanzania. Informed consents were obtained from all respondents of this study. All data have been treated as confidential and presented only in aggregate form or anonymised. No personal identifying details of any participant linked with the information provided by them.

RESULTS

Demographic and socio-economic characteristics

Table 1 presents information on the demographic and socio-economic characteristics of the study respondents in the two regions. Thirty-seven (37) percent of the respondents were aged between 26-35 years of age, followed by 36 – 45 years (27%). The most (52%) of respondent had attained primary education, 18% had not attended any formal school, while 14% reported to have attended secondary school. The most (35%) of respondents had no formal employment, 27% were doing self-businesses and 25% were farmers. Most respondents 381 (58%) reported to be married, and the proportion was high in Mpwapwa (74%) followed by those from Mufindi (63%). About 32% of respondents were categorised as poorest in the study districts. Majority (77%) of those classified as poorest were from Mpwapwa district. Only 6% respondents were classified as non-poor from Mufindi district (Table 1).

Table 1: Demographic and socio-economic characteristics of the respondents included in the analysis

Variable	Bahi	Dodoma City	Mpwapwa	Iringa MC	Kilolo	Mufindi	Total
	n=109	n=103	n=110	n=109	n=118	n=107	N(656)
Gender of head of respondents, **	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Male	59(54.1)	38(36.9)	67(60.9)	49(44.9)	52(44.1)	62(57.9)	327(49.8)
Female	50(45.9)	65(63.1)	43(39.1)	60(55.1)	66(55.9)	45(42.1)	329(50.2)
Age Categories of respondents							
< = 25, **	13(11.9)	25(24.2)	20(18.2)	12(11.0)	10(8.5)	12(11.2)	92(14.0)
26 – 35	38(34.8)	35(33.9)	39(35.5)	39(35.8)	47(39.8)	42(39.3)	240(36.6)
36 – 45	30(27.5)	21(20.4)	28(25.5)	34(31.2)	34(28.8)	29(27.1)	176(26.8)
46 – 64	23(21.1)	20(19.4)	20(18.2)	20(18.4)	22(18.6)	24(22.4)	129(19.7)
> =65	5(4.6)	2(1.9)	3(2.7)	4(2.7)	5(4.2)	0(0.0)	19(2.9)
Mean (years)[sd]	38.9[12.1]	35.8[12.0]	36.6[12.9]	38.2[11.9]	38.3[12.3]	37.3[10.2]	37.5[11.9]
Education Level of head of respondents							
No education, ***	29(26.6)	14(13.6)	40(36.4)	13(11.9)	15(12.7)	5(4.7)	116(17.7)
Primary, **	53(48.6)	41(39.8)	50(45.4)	56(51.4)	66(55.9)	77(71.9)	343(52.3)
Secondary, **	14(12.8)	24(23.3)	7(6.4)	18(16.5)	17(14.4)	12(11.2)	92(14.0)
Above secondary	13(11.9)	24(23.3)	13(11.8)	22(20.2)	20(16.9)	13(12.2)	105(16.0)
Occupation of head of respondents							
Formal employed	9(8.3)	21(20.4)	10(9.1)	18(16.5)	15(12.7)	11(10.3)	84(12.8)
Self-Business, **	20(18.4)	44(42.7)	7(6.4)	42(38.5)	38(32.2)	24(22.4)	175(26.7)
Farmer, **	33(30.3)	5(4.8)	69(62.7)	7(6.4)	20(16.9)	30(28.0)	164(25.0)
Not employed	47(43.1)	33(32.0)	24(21.8)	42(38.5)	45(38.1)	42(39.3)	233(35.5)

Variable	Bahi	Dodoma City	Mpwapwa	Iringa MC	Kilolo	Mufindi	Total
Marital status, **							
Married	65(59.6)	50(48.5)	81(73.6)	61(55.9)	57(48.3)	67(62.6)	381(58.1)
Not married	44(40.4)	53(51.5)	29(26.4)	48(44.1)	61(51.7)	40(37.4)	275(41.9)
Number of people in the respondents							
<=2	28(25.7)	38(36.9)	32(29.1)	30(27.5)	37(31.4)	27(25.2)	192(29.3)
3 – 4	41(38.5)	39(37.8)	39(35.4)	38(34.8)	35(29.7)	37(34.6)	230(35.1)
5 – 6	26(23.8)	17(16.5)	28(25.5)	28(25.7)	33(27.9)	34(31.7)	166(25.3)
>=7	13(11.9)	9(8.7)	11(10.0)	13(11.9)	13(11.0)	9(8.4)	68(10.4)
Average House Hold size [SD]	4[2.3]	3[2.4]	4[2.1]	4[2.1]	4[2.1]	4[1.9]	4[2.1]
CHF Insurance Status							
CHF insured	21(19.3)	22(21.4)	20(18.2)	19(17.4)	17(14.4)	19(17.8)	118(18.0)
Not insured	88(80.7)	81(78.6)	90(81.8)	90(82.6)	101(85.6)	88(82.2)	538(82.0)
Social Economic Status							
S1 (Poorest) , **	53(48.6)	12(11.6)	85(77.3)	4(3.7)	22(18.6)	36(33.6)	212(32.3)
S2, **	20(18.4)	13(12.6)	7(6.4)	18(16.5)	29(24.6)	41(38.3)	128(19.5)
S3, **	9(8.3)	16(15.5)	0(0.0)	18(16.5)	34(28.8)	12(11.2)	89(13.6)
S4, ***	16(14.7)	30(29.1)	4(3.6)	43(39.4)	23(19.5)	12(11.2)	128(13.6)
S5 (Non-poor), ***	11(10.1)	32(31.1)	14(12.7)	26(23.8)	10(8.5)	6(5.6)	99(15.1)

Note: *** denotes significance at 1%, ** at 5%, and * at 10% level

Ability and willingness of community members to enroll in iCHF

As shown in Table 2, majority (88%) respondents said they would repay their package after expiry considering the quality of the services provided by health insurance. Specifically, issues that are considered for renewal of the package included: health insurance package is relatively cheap (39%); full-time access to services (32%); reputation of health insurance plan (17%); and easy access to connected hospitals (6%). On the other hand, for those who didn't renew their insurance pointed out issues like, drug unavailability (14%); not satisfied with the services provided (14%) and not given answers to their complaints (7%) as the reasons for not renewing their premiums.

Table 2: Readiness to either re-enrol and not re-enrol among beneficiaries

Variable	n(%)
Considering the quality of the services provided by your health insurance, when the bundle ends up will you pay for it again	
Yes	104(88.1)
No	14(11.9)
Reasons to repay your package (n=104)	
Health insurance package is relatively cheap	41(39.4)
Reputation of health insurance plan	18(17.3)
Services available in package	33(31.7)
Choice of doctors, health facilities and other online service providers available because of a contract in the insurance scheme.	4(3.8)
Full-time access to services	25(24.0)
Access to services to me or to my family members even when I don't have money.	13(12.5)
Easy access to connected hospitals	6(5.8)
Reasons for not repaying your health insurance package (n=14)	
Unsatisfactory language of Health Insurance providers	1(7.1)
Unsatisfactory language of Healthcare providers	2(14.3)
They are not given answers to their complaints.	4(28.6)
Drug unavailability.	2(14.3)
Low Family Income	1(7.1)

Table 3 summarizes various sources of information of health insurance among beneficiaries and ex-beneficiaries. Most (52%) respondents received information from their employers. Other sources which were accessed by at least 15% of respondents included mass media channels such as magazine, radio and television; insurance agency or company; family or friends and; health facility, doctor's office, or clinic. The

majority (73.7%) of respondents reported that the sources of information on access to health insurance plans were helpful to them. Magazine, radio, or television were mentioned by the most (62%) of respondents as a recommended common source of information for health insurance to be used in the future. Other recommended sources include website, insurance agency or company; family or friends; employer; health centre, doctor's office, or clinic; public library, school, or community centre and; social networks.

Table 3: Source of information for health insurance

Variable	N=118
Sources of information about the insurance you signed up for	**n (%)**
Website	2(1.2)
Magazine, radio, or television	15(12.7)
Insurance agency or company	13(11.0)
Family or friends	22(18.6)
Employer	61(51.9)
Health facility, doctor's office, or clinic	22(18.6)
Religious or social group	8(6.8)
Public library, school, or community centre	6(5.1)
Social networks	3(2.5)
Usefulness of the sources of the information	
It Helped	87(73.7)
It helped a lot	21(17.8)
They did not help	8(6.8)
They weren't very helpful	6(5.1)
Sources of information for health insurance you can use or try to use in the future	
Website	22(18.6)
Magazine, radio, or television	73(61.9)
Insurance agency or company	43(36.4)
Family or friends	16(13.5)
Employer	31(26.3)
Health centre, doctor's office, or clinic	49(41.5)
Religious or social group	16(13.6)
Public library, school, or community centre	9(7.6)
Social networks	41(34.7)

As shown in Figure 1, majority of respondents (76%) believe that cash is the best way to pay for Health Insurance, and their opinion didn't differ between beneficiaries and non-beneficiaries. About a third of respondents (33%) recommended cash crops and 28% thought food products are the

best ways to pay for Health Insurance so that every Tanzanian can get health insurance.

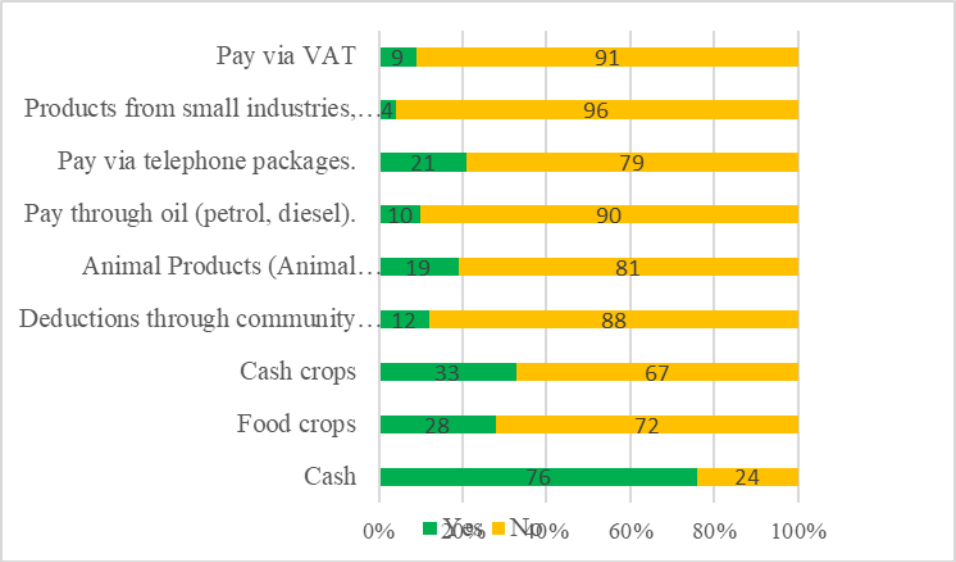

Figure 1: The best ways to pay for health insurance

Similar to questionnaire responses, qualitative interviews further examined possible ways for payment for insurance. The findings largely mirror quantitative findings however some differences were noted. While participants pay for insurance through salary deductions for public employees, individual cash payment from business or selling crops and animals, sponsorship by banks, cooperative unions and development partners, through qualitative interviews participants proposed a range of possible payment modalities to finance health insurance. First, payment through associations, for example, cooperative unions for farmers. For example, one participant commented, *"Payment through cooperative unions is a good one and it is very helpful"*. In support, the iCHF coordinator cited payment for other groups insurance, for instance, through drivers' unions for a group of more than 100 people although the requirement may be a challenge to some. This did not strongly emerge in quantitative inquiry. Secondly, cash payment through instalment system was proposed. In support of cash instalment, a participant in Dodoma commented:

> *"The best way to pay for insurance is to ensure that clients pay by instalment until the amount required to pay is reached. There could be arrangements with banks for free account where a person may be*

depositing may be 2,000/- every week until it reaches the amount required by the insurance fund".

Another respondent added:

"It would have been good if they allow small instalments. It would have been easy to manage 192,000/= instead of single payment which is a challenge considering people's income".

Third, selling livestock and crops. In addition to payment through cooperative unions, some respondents suggested direct payment by selling animals, commercial crops and food crops to cover the cost, although an emphasis was placed on the need to first educate them on the meaning and importance of insurance. For example, this was commented by a participant:

"Someone may sell groundnuts and keep 5,000/= or maize, chicken until the money reaches 30,000/= then s/he calls the enrolment officer for enrolment…this is called butter system and it is very good. It would have been nice if there was coordination between iCHF, people and potential market (buyers) …"

Fourth, payment through tax recovery from services such as petrol, phone and utilities. Tax recovery from petrol was driven by the notion that car owners have money (non-beneficiary), however, this may point to exploitation of car owners to benefit people with no cars. The preference of tax recovery from phone services was envisaged because of wider ownership even by non-beneficiaries. For example, a coordinator suggested:

"Almost every household in the community uses a mobile and in some more than one member has and uses a mobile phone every day. So, there is a huge potential for the iCHF to mobilize substantial resources from mobile phone users to cover for members' premium contributions. Mobile phone use has these days become as a basic need as people are so attached to phones to the extent that they almost cannot do without them. Mobile phone use is an opportunity to mobilize additional resources to strengthen iCHF financial base."

"when we buy phone vouchers there could be a particular VAT deducted. Also, I think it will be good if they can deduct from social services such as water, electricity and petrol".

A few participants were against cost recovery from mobile phones citing the high cost of phone services including airtime bundles; and the recovery of funds to finance insurance through mobile services would add

to the burden people are already experiencing. Furthermore, cost subsidization by the government for social groups that cannot pay for themselves such as under-five children, pregnant women and elderly.

Low family income was mentioned by 56% of respondents as the reason for individuals not willing to join health insurance schemes. Other common reasons included drug absence, no full understanding of health insurance funds and not satisfied with the services provided (Table 3).

Table 3: Reasons for not being willing to join health insurance scheme

Variable	Beneficiaries, (%)	Non-Beneficiaries, n(%)	Total, n(%)
Poor health insurance providers' language	14(11.8) *	28(5.2)	42(6.4)
Poor language from health care providers	11(9.3)	50(9.3)	61(9.3)
They are not given a response to their complaints.	19(16.1) *	59(10.9)	78(11.9)
Drug absence.	53(44.9)	272(50.6)	325(49.5)
They take long time before they get services. (maturity)	7(5.9)	26(4.8)	33(5.0)
Low Family Income	59(50.0)	307(57.1)	366(55.8)
The money to contribute for health Insurance funds to the year is too high.	11(9.3)	66(12.3)	77(11.7)
Cash payments are cheaper than paying for Health Insurance Funds.	3(2.5)	8(1.5)	11(1.6)
They have no full understanding of health insurance funds	64(54.2) ***	221(41.1)	285(43.5)
CHF/ iCHF does not have services to refer patients.	4(3.4) *	28(5.2)	32(4.9)
Some health insurance coverage cannot be used in other regions/districts	3(2.5)	31(5.7)	34(5.2)
Some health insurance coverage cannot be used in private health facilities	8(6.7) ***	33(6.1)	41(6.2)
Some health insurance coverage has not linked to pharmacist or ADDOs	4(3.4)	21(3.9)	25(3.8)
They are not satisfied with the Services provided.	27(22.9) ***	109(20.3)	136(20.7)
Peer pressure	1(1.0)	16(2.9)	17(2.6)

**P-value<0.05, **P-value<0.01 & ***P<0.001*

Effects of socio-economic status on the willingness and ability to pay

As shown in Table 5, overall, more (52.8%) non-beneficiary respondents with lowest socioeconomic status were willing to pay TZS 30,000 or 150,000 for a household with up to 6 members to cover iCHF than those (47.2%) of the same socio-economic status who were not willing to pay same amount. Further the statistics indicate that non-beneficiary respondents with lowest economic status who are willing either to pay or not to pay are more than others who belong to other categories.

Table 5: Association between SES and willingness to join iCHF

Health Insurance Package	Socio-economic status	Non – Beneficiaries	
		Willing, n (%)	Not willing, n (%)
Wiling to Join iCHF scheme	Lowest	93(52.8)	83(47.2)
	Second	42(44.2)	53(55.8)
	Middle	25(43.7)	32(56.1)
	Fourth	31(60.8)	20(39.2)
	Highest	8(30.8)	18(69.2)

Pearson chi2(4) = 8.8019 Pr = 0.066

Logistic regression on WTP

Table 5 shows the relationship between the WTP for iCHF and independent variables which were included within the logistic regression model. The results show a statistically significant negative relationship 0.526 (p = 0.034) between household aged above 55 years of age and WTP. More specifically, as age increases above 55 years, the likelihood to pay for health insurance premium decreases. We also found a positive statistically significant relationship 1.882 (p = 0.034) between the household with small business and WTP.

Table 5: Multivariate logistic regression on the WTP

Variable Odds Ratio (Confidence interval)	Univariate Analysis (656)		Multivariate Analysis (656)	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Age of Respondents,				
Below 35	Reference			
35 – 44	0.913	0.625	0.937	0.749
45 – 54	1.356	0.187	1.200	0.457
Above 55	0.556	0.039	0.526	0.034
Respondents head being male	0.710	0.029		
Respondents head being married,	0.863	0.351		
Level of respondents' education				
None	Reference			
Primary	1.031	0.888		
Secondary	1.268	0.398		
college	0.728	0.240		
Respondents employment status				
Formal	Reference			
Small business	2.149	0.005	1.882	0.034
Farmer	1.181	0.540	1.199	0.584
Not employed	1.368	0.222	1.257	0.420
Household size				
Less than 3	Reference			
3-4	0.993	0.972	1.015	0.940
Above 4	1.081	0.689	1.082	0.710
Household with chronic illness	1.499	0.114	1.590	0.088
Wealth index value (proxy of income)				
S1 (Poor)	Reference			
S2, **	1.269	0.288	1.121	0.628
S3, ***	1.812	0.021	1.573	0.099
S4	1.534	0.058	1.461	0.137
S5 (Non-poor), ***	0.825	0.434	0.853	0.592
Constant				
Number of observations				656
Wald chi2(11)				27.69
Prob > chi2				0.010
Pseudo R2				0.031

Note, **P-value<0.05, **P-value<0.01 & ***P<0.001* (corresponds to the multivariate results)

Suggestions for improving health services through insurance

Unlike quantitative inquiry, participants of qualitative inquiry offered some suggestions for improving services through insurance schemes. First, improving healthcare service quality. For example, a coordinator commented:

> *"The most important thing is to improve healthcare services first…health care workers need to work in a comfortable environment and ensure there is a good relationship with the client".*

Service improvement was further envisaged through increasing availability of medications, medical supplies, medical investigations and improving client-provider relationships. One participant suggested a need to have someone stationed in all healthcare facilities to ensure that services offered by providers matches client's entitlement. However, such a move may have additional financial implications to insurance schemes. Second, strengthening collaboration and good communication between insurance schemes and service providers by improving the payment system and more involvement in solving claim related challenges. For example, the participant suggested*:*

> *"There is a need to improve the payment system by introducing a more transparent mechanism for example availing up to date price lists of drugs and other services to health facilities so that they can claim exact payments according to the actual services provided. Also, there is a need for more involvement of health facility workers in solving matters related to insurance claims".*

Collaboration and communication were further envisaged through joint meetings and forums between insurance scheme, service providers and sometime with beneficiaries. A facility in charge commented:

> *"We need good communication between health insurance schemes and healthcare facilities…there is a need for frequent meetings…. creating a tendency of meeting between healthcare workers and insurance leaders after few months to discuss contributors of deductions…I think this will erase the existing misunderstandings".*

Communication was further envisaged through healthcare providers building a tendency of sharing information to insurance schemes on the challenges encountered timely (Coordinator). Third, a need to eliminate 'business' approach to services in healthcare facilities to fuel equal treatment of clients. As one participant suggested*,*

> *"The government should eliminate the business-like approach in healthcare facilities (e.g. prioritization of cash clients) so that people receive the care they deserve".*

Improving system network in healthcare facilities. Concerns of internet network emerged as impacting verification of clients before and after offering care. A coordinator commented*:*

> *They need to improve the network because there are times when the network is down and the healthcare worker cannot offer services because the form takes too long to populate information and even the internet bundle becomes finished quickly since the network is down...that is a big challenge".*

In the case of improving service package, one participant commented:

> *"They need to improve their packages to add more services so that when the beneficiary has insurance it becomes easy to access many services in hospitals".*

DISCUSSION

The present study was the first of its kind to assess the community members' willingness and ability to pay for health insurance and its associated factors impending enrolment in Tanzania. Regarding readiness to join an insurance scheme, the findings indicate that the majority of participants (over 70-percent) appears to be ready to join health insurance. The drivers of willingness to join identified in the present study include the perception of affordability (a third of participants), ensured access to services all the time and access to services regardless of financial difficulties. Similarly, to our findings on affordability in Ethiopia premiums for insurance bids was found to influence household WTP (Negera and Abdisa, 2022). On the contrary, unaffordability of insurance, insufficient information and inadequate services were identified as the reasons for unwillingness to join. This may explain why the findings indicated that some participants required services to be improved, adequate information to be provided and affordability as are among the pre-requisites to join insurance schemes. As noted above, these issues have been widely documented as impacting uptake of insurance services in previous studies (Fadlallah et al 2018; Fenny et al 2016), requiring attention more broadly. Furthermore, WTP for health insurance is closely linked to the household income, which could be from paid employment or business (Ahmed *et al*., 2016).

This implies that efforts to universalize health insurance requires massive improvements in quality of services as well as having customized packages for rural dwellers and people of low income to attract potential members. Our findings are slightly similar to the findings of recent studies elsewhere (Ogundeji et al., 2019; Miti et al., 2020). For instance, a study conducted in Nigeria reported a willingness to pay 1.68 US per month per person with rural- urban variations making an approximate amount of 45,000/= per person per year (Ogundeji et al., 2019). All these amounts in Nigeria and Ghana are within the range cited by the participants of our study, indicating that our findings on willingness to pay may not be different from other African countries (Miti et al., 2020).

These findings further suggest that although the majority of participants demonstrate high willingness to pay, less than half are able to pay the proposed CHF/ iCHF and almost equal numbers of those who demonstrate willingness to pay are able to pay the proposed amount for UHC. Similar to willingness to pay, economic hardship (low income) was the most important issue that drove inability to pay higher amounts as well as informal occupation and less education. Some of these issues such as rural-urban variations, income and illiteracy are frequently cited as determinants of unwillingness to pay in previous studies (Al-Hanawi *et al*., 2018; Miti *et al*., 2020; Ogundeji et al., 2019). This suggests that a consideration of different premiums across residence (urban and rural), income (high and lower), education (educated and illiterate) and/or massive community sensitization may be needed for an inclusive UHC.

Health insurers, policy makers, beneficiaries and non-beneficiaries offered insights on how to improve the design and implementation of UHC. First, most recognized the challenges of existing insurance schemes including patient/community challenges such as inadequate awareness or understanding about insurance including a tendency of some clients to question whether their money will be refunded if they do not get sick during the cover period, poor understanding of insurance packages, seeking care without an insurance card due to forgetfulness or misplacement, a tendency of patients to dictate medical treatment they want to receive, buying insurance during sickness and wanting to receive care immediately against insurance guidelines, a tendency of shopping around facilities or doctors on the same day of receiving care and residence in hard to reach villages). Other challenges are related to the facility including poor quality of services characterized by unavailability

of medications, medical supplies and investigations, long waiting time, bad providers' language, prioritization of cash clients over insurance members, prolonged process of care, a necessity for referral letter in tertiary facilities, the need for approval for some services, non-preference of iCHF in some facilities, missing some services with small insurance (iCHF) and not accepting CHF/ iCHF insurance at tertiary levels, and long distance to the facility for some members and network issue.

More challenges that were pointed out are related to insurance scheme, which include package design problems such as categorization of members within public health insurance scheme and limitations of services and medications based on levels of healthcare facility not level of medical expertise. On top of that, enrolment challenges such as unfriendly infrastructure and geography to reach potential members in some districts; inadequate awareness among potential members (on the concept of insurance and packages); requirement for certain number of people for group insurance, and concerns of poor quality of care discouraging non-beneficiaries to join and contributing to defaulting, dissatisfaction with the duration of cover, network problems, delays in card processing and insurance maturity and delays in generation of control numbers for payment). As noted above, these challenges have been widely documented as impacting willingness to pay (Al-Hanawi *et al*., 2018; Miti *et al*., 2020; Ogundeji et al., 2019) and therefore uptake and implementation of health insurance schemes (Fadlallah et al 2018; Fenny et al 2016) in many countries.

The findings indicate that various factors such as low family income, inadequate knowledge on health Insurance funds were associated with individuals not joining health insurance funds. The overall mean household and individual capita income per day were respectively 19,362.15 and 6,248.59 Tanzanian shillings. Nearly three quarters of respondents expressed their readiness to join health insurance. However, too high cost or inability to afford insurance was a concern for about half of respondents and this was reflected in their willingness to pay, only 24% to 68% were willing to pay the four proposed insurance packages. Similarly, 41% to 65% of respondents indicated their ability to pay for various health packages. The ability to pay didn't differ between beneficiaries and non-beneficiaries. However, lowest level of socio-economic status, informal occupation, no schooling were the most common factors associated with not willing to pay and also ability to pay

for various UHCI packages. Therefore, there is a need to design segmented insurance packages that consider residence (rural-urban) and income groups; however, such a move should ensure equitable access to basic healthcare services to all groups in order to minimize dissatisfactions. Most insurance beneficiaries and non-beneficiaries considered the premiums expensive because of variations in income and dissatisfaction with services. There is a need to design insurance packages that consider income groups; however, such a move should ensure equitable access to basic healthcare services to minimize dissatisfactions. The findings suggest that non-beneficiaries are willing to join an insurance scheme with some willing to pay any amount. However, the prerequisites for joining/paying for insurance were sufficient education, assurance of access to medications and good services, reducing the insurance premiums and payment by instalments. We therefore suggest continued service improvement efforts as a key entry point to attracting new members. However, customized packages of less cover duration (say 3 or 6 months) may be a consideration to cater for clients desiring to pay by instalments.

CONCLUSION

Our findings show that the majority of community respondents and health service providers had inadequate knowledge, unfavourable perception and poor practice towards health insurance schemes. The households should be encouraged to formalize their small business, this will improve their income and enrolment into the insurance schemes. Based on the above evidence, we recommend that the benefit packages should be revised to fit the need of the people. Reimbursements to the facilities should be used to improve the quality of service including purchase of healthcare commodities.

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