Health Believes and Willingness to Pay (WTP) for Social Health Insurance in Post Conflicts Fragile State South Sudan

Lado Gwokorok (ladogwokorok@gmail.com)
X – assistant Professor

Research

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Abstract

Background

Funding of healthcare in Post conflict fragile state South Sudan is mainly done by international donors. Economic growth in such states, is likely to plunge between ($ 1.4 and $ 2.8) billion. Post conflict fragile states have higher rate of infectious and communicable diseases. Aim is to establish that post conflict fragile state South Sudanese are willing to pay for social health insurance. The study is to fill this literature gap.

Households are susceptible and varies in health risks behaviour. Sudden illness sparks sense of illness affecting. Households cue to providing medical treatments. Successful treatments inspired households. Our desire to achieve in the community; enhances believes in treatment helping illness.

Methods

A modified version of (Form (II), questionnaire was used in this research. The aim was to measure the health believes of Post Conflict Fragile State South Sudanese and willingness to pay for social health insurance. A Two-way analysis of variance was used.

There were 205 females and 518 males among the sampled, family sizes. Household income, was 5,00 to above 3,600 South Sudanese pounds. Type of pecuniary were (land ownerships, cash deposits, crop stock, animal stock, machinery). Respondents were asked years’ worked on range of (3, 7, 11) years.

Results

A mean of approximately 3,777 South Sudanese pounds ($ 32 USD) was established. The female gender had mean of about 3,134 SSPs compared to 4,032 SSPs of the male counterpart. Family sizes, (11 to 15) and (16 to 20) heads had mean of 6,429 and 5,036 pounds. The model was able to explain 37.03% percent of the mean variations, (P-value = 0.0045).

Discussion

This finding is superior to the $ 11.12 annual premium from Northeast Ethiopia. This research has noted the shift in individual behaviour towards preventive health behaviours. The degree of fragility is a limitation.

Conclusions

Social health insurance can finance healthcare services in post conflict fragile state South Sudan. Health believed model is relevant to health insurance and it is important in demonstrating behavioral change.

Background
Post conflict fragile states have issues in their health care systems that are demanding constant and continuous support from many developed countries and from the World Bank and International Monetary Fund. Post conflict fragile states have higher rate of infectious and communicable diseases. Such countries were predicted to lose (20%) twenty percent of their national revenue. Their economic growth will shrink between ($ 1.4 and $ 2.8) billion (Schieber, et al., 2006, p. 2).

Budget for health care system in post conflict South Sudan is declining from 7% to 4% percent. The Abuja conference in 2001 declared that each country in Africa to increase health budget by 15% per cent. Only six countries managed to meet this target. Despite post conflict fragile state South Sudan had zero debts during those years.

The demand for health care services is on the rise with rise in diseases as the population growths. This will require additional funds to cover the costs of healthcare services. It is pertinent to reflect into the Alma Ata (WHO, September 1978) declaration of primary health care with the agenda of sections: -

(4) The people have the right and duty to participate individually and collectively in the planning and implementation of their health care.

(5) Government has the responsibility of its health care system and primary health care is the norm for achieving a vibrant social and productivity society.

There is a growing and promising growth in the economic sectors of post conflict fragile state South Sudan. There are South Sudanese in the rural areas that used to pay tax from share of their agricultural output. This payment of tax as a share of goods was very common among the Bari tribe. Social health insurance as a financing mechanism in a chronically underfinanced health system is receiving much attention (GTZ/ILO/WHO 2006a, Carrin & James, 2004; WHA, 2005). The informal sector too (GTZ/ILO/WHO, 2006b) stated in (Mathauer, et al., 2008) is a focal point.

South Sudan is one of the Post Conflict countries and is a Fragile State (Aime 2008, Carment and Samy 2011, Olowu and Chanie 2016). Fragile State was a state that had capabilities of funding itself through its own capital, as Adam Smith (1776) defined capital in “Wealth of Nation”, and had the abilities of operating and running its own affairs to some satisfactions of her population.

Healthcare budget for Post Conflict Fragile State South Sudan has been declining from 7 % to 4 % per cent, since 2008. Only six African countries met the Abuja declaration of dedicating 15 % per cent of their budget for healthcare. International healthcare funding has been trickling and accessibility to healthcare services is difficult occasionally (Bräutigam and Knack 2004, Cometto, Fritsche et al. 2010, Varela, Cali et al. 2016, Roberts, Guy et al. 2017). Mortality rate in post conflict fragile state South Sudan is (8) eight times the world average. Under funded healthcare system can increase mortality rates, (Lockman, et al., 2003; Walsh & Kenneth, 1980, p. 147). Besides, there are households who cannot afford to cover their medical costs (Erasmus and Nkoroi 2002).
Funding healthcare through employer and employee contribution; either public or private mixed can alleviate health of the local population (Mathauer, Schmidt et al. 2008). Philippines implemented social health insurance despite economic hurdles (Obermanna, Jowettb et al. 2006). Social health insurance and its variants were found to be effective in several countries (Spaan, Mathijssen et al. 2012).

Health Believed Model (HBM)

This research was in contrast to researches that used (WTP) in contingent valuation method over an assumed gaming scenario. Adopting gaming scenario increases the cognitive error term of respondents. This is because there exists a gap between health issues outlaid and the sudden presentation of (WTP). But when health scenario is presented in direct association with health and medical costs, human cognition becomes more focused on the expected behavioral outcome.

Health Believed Model is the application of a measured human behaviour; mostly on health and medicine. The concept of cognitive theory in health is also related to the collective actions needed in insurance (Bandura 2000, Bandura 2001). Twenty nine (29) studies had substantially adopted the health believed model (HBM) (Janz and Becker 1984). A number of researchers suggested that our behaviour is both qualitative and quantitative (Bandura 2000, 2001, 2004, Ogden 2007). These behaviours are grounded on the expected value and subjective utility theory (Peak 1955). Mckenna (1996) stated that the outcome of the different cognitive behaviour when sum over a population will lead to a desired outcome (Conner 1993).

Households are susceptible to health risks and will take any measures to remain healthy (Moore and W. Kip Viscusi 1989). Skilful and educated workers will certainly demand protection from their employers to minimise future health risk and its effects (Iversen and Sosicice 2001). Public and self-employed differ in their health risks behaviour (Atella and Rossi 2005). Cuing to health protections varies between households and the severity of the ailments (Rosenstock, Strecher et al. 1988).

On many occasions, ill health is perceived as a threat in our societies. Inoculating the family with remedies for a healthy body has become part of our norms. Sudden illness sparks sense of illness affecting. Households cue to providing medical treatments (Morrman and Matulich 1993). Besides, households are inspired from successful treatments. This cue household into willingness to pay for their health. But, lack of proper income streams and pecuniary, may refrained some households from providing medical treatments. Our desire to raise family through achievement in the community; enhances believes in treatment helping illness (Gelb and Gully 1979). Believes in the outcome of willingness to pay (WTP) from several households can lead to financing of social health insurance.

Theoretical framework
Life expectancy will rise higher when the independent variables were positively observed by the individuals (Cichon, Newbrander et al. 1999). Communal life in Post Conflict Fragile State South Sudan will cue into a common life goal.

Body resistance always on prescription should indicate risk and vulnerability in someone's health. Those who “cannot tell” their resistance to illness and had had previous health as “unknown” were expected to cue for (SHI). Similarly, health outlook, "I do not know" is a risky health behavior because previous health should have mediated their cognition.

Sickness situation as "None" is a risky behavior because life, illness and death are events with natural certainties that bear expectations. Sickness respond as "Neutral" is a risky behavior because the expectation from being sick is to cue to action. Responses of “seeking medical attention” are expected to propagate into health benefits of (WTP). While illness affecting is to moderate believes in positive health outcomes. Believes in positive health outcome are expected to rise along the scale of treatment helping illness (Fletcher, Morgan et al. 1989).

**Methods**

In this research, ethnomethodology and interpretive perspectives were utilized. A modified version of (Form (II), (Ware Jr, 1976; Moss-Morris, et al.,2002) questionnaire was used in gathering the sample. Both closed and a few open-ended questions were used. Besides data on general health, financial barrier and self-efficacy data were solicited. Mixed research methods in health insurance had been adopted in the following studies, (Mladovsky, et al., 2014; Ware, et al., 1980; Singh, et al., 2015). South Sudanese had the capabilities of raising funds, but there is or are factors that impeded such an initiative. The aim was to measure the health beliefs of Post Conflict Fragile State South Sudanese and an expected behavior of subscribing to social health insurance.

A study in Malaysia gave respondents three options of health insurance (out of pocket system, compulsory social health insurance and voluntary community-based health insurance). Willingness to pay for health insurance was used as a measure of premium. Shafie and Hassali (2013) found that 63.1% per cent of Malaysians preferred voluntary community-based health insurance.

**Data collection and Procedures**

Participants’ age groups were from 19 to above 66 years, at 6 years’ intervals. There were 205 female representative and 518 males among the sample. Education levels from “none” to “above master’s degree” and income from 500 to above 3,600 South Sudanese pounds (SSPs). Type of pecuniary includes (none, land ownerships, cash deposits, crop stock, animal stock, machinery, permanent buildings). Respondents were asked years’ worked on range of (3, 7, 11) years and also hours worked on range of (2) to (12) twelve hours. Besides, participants were asked to supply their family sizes and ethnicity.
A number of enumerators were used in distributing the desired questionnaires. The field work took about three (3) months in early 2018. Several suburbs in Juba were the main sampling area. Respondents in government and non-governmental departments were solicited via key individuals and permission to conduct the survey were granted.

**Statistical tools**

Two-way analyses of variance ANOVA were used and willingness to pay (WTP) was the dependent variable. Since the predictors had been assumed to have interaction effects, the Two-way ANOVA and regression were applied (Sekaran & Bougie, 2013).

**Results**

A mean of approximately 3,777 South Sudanese pounds ($32 USD) was established out of the 723 households. This mean was measured at 95% per cent confidence; that had a range of [3,298, 4,256] SSPs. Yet at 98% per cent confidence, the range is between [3,147, 4,407] SSPs ref. (table 1, 2).

The female gender had mean (WTP) of about 3,134 SSPs compared to 4,032 SSPs of the male gender counterpart. Family sizes of (1 to 5) heads and (6 to 10) heads had mean (WTP) of about 3,555 and 3,774 pounds. While family sizes of (11 to 15) heads and (16 to 20) heads had mean (WTP) of 6,429 and 5,036 pounds, ref (fig 1.).

Those who work at local government had average (WTP) of 3,426 compare to 3,437 pounds for those at national government. Working at NGO had average (WTP) of about 5,423. While organized force had average (WTP) of approximately 3,834 pounds. And those who owned business had average (WTP) of 4,432 pounds. Working privately, had average (WTP) of 4,103 pounds. The unemployed had average (WTP) of approximately 1,803 pounds. ref. (table 2). Households, that owned an agricultural farm are (WTP) 3,821 SSPs on average in contrast to 4,577 pounds for households that owned animal stocks. While households that had invested in owning land titles are (WTP) approximately 4,003 SSPs. Similarly, households that put their cash into a saving accounts are (WTP) about 4,699 pounds. Those with no pecuniary at all were (WTP) nearly 3,224 SSPs.

**Analytical Statistics**

The health believed (HBM) model was able to explain 37.03% per cent of the variations in mean (WTP) for (SHI). A significant P-value (0.0045) was achieved. When the model was interacted, the explanatory variables were able to explain 43.02% per cent of the variations. A p-value of (0.0041) was achieved at the (0.05) % per cent levels ref. (table 3, 4). Perceptions of vulnerabilities under current health as “unknown” was significant at p-value of 0.042. Interactions of current health and sickness response on “unknown with seek medical” was also significant at p-value (0.028) under the (0.05) % per cent levels.
Besides, measures of treatment helping as “more and most likely” were also significant at p-values (0.047, 0.035) of 0.05% confidence levels, ref (table 4.).

**Previous research**

A review study on the dysfunctional (NHIS) national health insurance for government employees was done in Juba, South Sudan (Basaza, Alier et al. 2017). The study used dichotomous contingent valuation methods of 5% to 10% per cent of total income. Similarly, a study among Senegalese used bidding game on (WTP) (Bonan, LeMay-Boucher et al. 2014). It concluded that income, wealth and risk preferences were effective in explaining (WTP) for mutual health organization.

**Discussion**

This research has successfully adopted psychometric analysis using the HBM to pay for social health insurance in Post conflict fragile state South Sudan. Human desire is unbounded. Changes in household’s income was accommodated by having two nominal (WTP) amounts. Such an approach was also used by (Cameron and Quiggin 1994) in (Bock, Hajek et al. 2017).

The new understanding is that residents from post conflict fragile states South Sudan are on the same face of the coin on food concerned and funding health care. WTP, is human desire and when unbounded, it gives more space for behavioral decisions. This research has established that post conflict fragile state South Sudanese from formal and informal sectors were (WTP) an equivalent of about $ 32 dollars per annum for funding social health insurance. This finding is superior to the $ 11.12 annual premium from Northeast Ethiopia and $ 5.6 per annum premium from Nepal of (WTP) for community-based insurance (Ko, Kim et al. 2018, Minyihun, Gebregziabher et al. 2019). Health believe model (HBM) has been applied to preventive behaviors of social health insurance. This research has noted the shift in individual behaviour towards preventive health behaviours. As such, this finding is superior to the monthly rate of the dysfunctional (NHIF) national health insurance of South Sudan (Basaza, Alier et al. 2017).

**Health behavior**

The (HBM) health believed model had demonstrated its applicability in health insurance. Current health and paying medical cost had no relationships, but a person previous health status was found to have an association with paying medical costs. While current health and previous health are associated and that means current health can be known from previous health. Therefore, preventive behavior of (WTP) for social health insurance can be explained by health risks (previous health). This is in line with findings that previous health had effect on earnings (Andren and Palmer 2008). Participants’ depths of paying medical costs were cognitively due to the benefits from treatment helping sickness. These two were found to be associated in this research. Perceived vulnerabilities, barriers to pay, and self-efficacy were
effective in explaining the expected preventive health behavior among post conflict fragile state, South Sudan ref, (table 4.).

On the other hand, risky behavior is justified from participants who answered "I cannot tell on the measure of vulnerability (body resistance to illness as "unknown" and previous health). Vulnerable health outlook when answered "I do not know" is a risky health behavior because previous health should have mediated the cognitive behavior. Sickness situation as "None" is also a risky behavior because life, illness and death are events with natural certainties that bear expectations and behavioral properties. Furthermore, sickness respond as "Neutral" is a risky behavior because the expectation from being sick is to cue to action of preventive ill health behavior. Treatment helping illness at the lower end of the scale "concern" is a perception to health threats and as the scale moves to the upper and upper most end, it becomes a positive health believe outcomes. The expected preventive behavior of self-efficacy on (WTP) for health insurance is supposed to shift further to the right side of the mean. While perceived threat “illness affecting” should moderate believes in positive “outcomes” from treatment helping illness. As such, the expected cognitive weights should have shifted more to the right hand side of treatment helping illness scale.

Conclusions

The expected behavior of wanting healthy body and avoiding perils of ill health, upon income productivity and longevity in life, were cognitively achieved through the benefits of (WTP). The concept of cognitive theory in health is indeed related to the collective actions needed in insurance (Bandura 2000, Bandura 2001). Social health insurance is an alternative funding vehicle in Post conflict fragile state South Sudan, as concerns for health protection were viewed more important than food concerns. Post conflict fragile states have a larger proportion of semi stable dwellings with viable economic activities. Being group underwriters of her own healthcare services, will enforced sensed of responsibilities and progress in human society.

Several views emerge from the likelihood of funding health care insurance in post conflict fragile state South Sudan. One is the adoption of social or statutory health insurance by employers and employees. Second, the adoption of community-based health insurance for the informal sector of the economy (Spaan, et al., 2012). Yet, Sub-Saharan Africa, rudimentary governing is very strong in delivering her social welfare programs via communal settings. Besides, the research has noted that some of the respondents are likely to opt for private health insurance. Another alternative is dedicated tax known as earmarked taxes. Approximately 50 years ago, Philippines a developing country, had implemented social health insurance. The implementation was noted to be very successful as Philippine have benefited from the economic development regardless of economic constraints, (Obermann, et al., 2006).

List Of Abbreviations

HBM = Health Believed Model.
WTP = Willingness / Willing to Pay.

SHI = Social Health Insurance.

NHIF = National Health Insurance Fund.

SSP = South Sudanese Pounds (currency)

Gov. = government

Declarations

Ethical Approval and Consent to participate

Granted by various government and non-governmental agencies

Consent for publication:

Not applicable

Available of data and materials:

Will be available in XL format on the publisher website repository

Competing interest:

Not applicable

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Authors' information

Dr. Lado Tombe Gwokorok

Email: ladogwokorok@gmail.com

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### Table 1
Mean Willing to Pay for Social Health Insurance

| Variable | Obs. | Mean  | Std. Err. | [95% Conf. Interval] | [98% Conf. Interval] |
|----------|------|-------|-----------|---------------------|---------------------|
| WTP      | 723  | 3,777 | 243.82    | 3,298.5             | 4,255.8             | 3,208.7             | 4,345.6             |
Table 2
Mean (WTP) in SSPs of Factor Variables

| Descriptor   | Variables      | Mean (u) WTP (SSP) |
|--------------|----------------|--------------------|
| Gender       |                |                    |
|              | Female         | 3,133.67           |
|              | Male           | 4,031.81           |
| Employment   |                |                    |
|              | Local          | 3,425.88           |
|              | National       | 3,437.42           |
|              | NGO            | 5,423.33           |
|              | Business       | 4,431.82           |
|              | Other          | 6,936.36           |
|              | Unemployed     | 1,803.17           |
|              | Organized force| 3,834.41           |
| Households   |                |                    |
|              | [1 to 5] heads | 3,555.11           |
|              | [6 to 10] heads| 3,774.46           |
|              | [11 to 15] heads| 6,428.82       |
|              | [16 to 20] heads| 5,036.11          |
| Pecuniary    |                |                    |
|              | Agri. farm     | 3,821.13           |
|              | Animal stock   | 4,577.14           |
|              | Land           | 4,003.24           |
|              | Machinery      | 5,630.00           |
|              | None           | 3,224.26           |
|              | Permanent house| 4,119.10           |
|              | Savings        | 4,699.11           |

The female gender had mean (WTP) of about 3,134 SSPs compared to 4,032 SSPs of the male gender counterpart. Family sizes of (1 to 5) heads and (6 to 10) heads had mean (WTP) of about 3,555 and 3,774 pounds. While family sizes of (11 to 15) heads and (16 to 20) heads had mean (WTP) of 6,429 and 5,036 pounds, ref (Fig. 1.).
Table 3
Regression model (HBM)

| No interactions WTP | $R^2$ | $F(220, 501)$ | Prob. > F | No. of obs. |
|----------------------|-------|---------------|-----------|-------------|
|                      | 0.3703| 1.34          | 0.0045    | 722         |

Table 4
Regression. interactions of HBM sub elements

| Source                        | SS         | Df   | MS            | Number of obs. | 722     |
|-------------------------------|------------|------|---------------|----------------|---------|
|                               |            |      |               |                |         |
|                               |            |      |               | F(261, 460)    | 1.33    |
| Model                         | 1.33E + 10 | 261  | 51145870      | Prob. > F      | 0.0041  |
| Residual                      | 1.77E + 10 | 460  | 38430407      | R-squared      | 0.4302  |
|                               |            |      |               | Adj. R-squared | 0.107   |
| Total                         | 3.1E + 10  | 721  | 43033369      | Root MSE       | 6199.2  |
| WTP                           | Coef       | Std. Err. | t   | P > t     | [95% Conf. Interval] |
| Family size                   | 15         | 16258.1 | 2768.6 | 5.87    | 0.000   | 10817.35 | 21698.76 |
| Sickness role                 |            |        |               |                |         |
| Look for treatment            | 2646.8     | 1202.7 | 2.2        | 0.028    | 283.4465 | 5010.2   |
| Current health & Body resistance |        |        |               |                |         |
| Very bad, Can't tell          | -31963.7   | 16312.7 | -1.96    | 0.051    | -64020.5 | 93.00503 |
| illness affecting             |            |        |               |                |         |
| Most likely                   | -3728.3    | 1777.7 | -2.1       | 0.037    | -7221.68 | -234.839 |
| Treatment helping             |            |        |               |                |         |
| Likely                        | 3861.1     | 1538.2 | 2.51       | 0.012    | 838.4016 | 6883.877 |
| Most likely                   | 3213.6     | 1410.9 | 2.28       | 0.023    | 440.9276 | 5986.271 |
| Paying medical                |            |        |               |                |         |
| Likely                        | -4299.7    | 2035.0 | -2.11      | 0.035    | -8298.86 | -300.602 |
| _cons                         | -3468.2    | 10492.5 | -0.33    | 0.741    | -24087.3 | 17151.02 |

Figures
Figure 1

Household Willingness to Pay for Social health Insurance

WTP = willingness to pay for social health insurance