# SOCIETAL-SPECIFIC FACTORS RELATED TO ADHERENCE TO ROUTINE NON-PHARMACOLOGIC INTERVENTIONS AMONG PATIENTS WITH CHRONIC ILLNESSES ATTENDING LUWEERO HEALTH CENTER IV.

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## ABSTRACT.

### Background:
The study aims to determine societal-specific factors related to adherence to routine non-pharmacologic interventions among patients with chronic illnesses attending Luweero HC IV.

### Methodology:
A cross-sectional survey design using questionnaires was adopted to collect data from 326 patients with chronic illnesses visiting Luweero Health Centre IV. This district is located approximately 47 miles from north Kampala. This center was chosen based on the number of patients having chronic illnesses, attending and receiving services. A simple random sampling technique was used to select patients, and only those who met inclusion criteria were interviewed. Purposive sampling was used to select 5 health professionals in charge of chronic illnesses.

### Results:
Out of the 326 patients who participated in the study, adherence to routine non-pharmacologic interventions due to societal-specific factors was lowest (33.3%) amongst patients with cultural beliefs and highest (74.4%), amongst patients who have no cultural beliefs, highest (61.0%) amongst patients who believed that non-pharmacological treatment takes long, unlike amongst patients whose belief is that herbs and traditionalist treat best 36.2%. The lowest among patients whose cultural practices are ritual performances done on patients by traditionalists is 43.2% and the highest amongst patients whose cultural practice is taking herbs is 78.8%.

### Conclusion:
All societal factors at multivariate analysis were found to have an impact on adherence to routine non-pharmacological interventions.

### Recommendation:
Non-pharmacologic interventionists to design and institute group visiting mechanisms, especially among patients who are unmarried if routine adherence is to be improved.

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## BACKGROUND.

In Uganda, there is, however, poor adherence to routine non-pharmacologic interventions among individuals with chronic illnesses. Evidence from the urban areas shows that as high as 42% of the patients suffering from chronic illnesses fail to adhere to routine Non-Pharmacological Interventions (Nakayaga, et al., 2014). Examples of routine non-pharmacological interventions can be for example adherence to diet, physical activity, and extra counseling. Ahmed, et al. 2014; Blackburn, et al.,2013, Caisley, Muller.2012, Vrijens , et al .,2012. These interventions have been evidenced to pose fewer side effects rendering them as safer options in the management of chronic illnesses (Gillet al., 2007). If not addressed, such inconsistent adherence to routine non-pharmacologic interventions will continue to increase the burden on the already dysfunctional health system (Malgo, 2015) resulting in the loss of productivity due to illness among the individuals themselves and those who are caregivers at home and societies where they reside. This study aims to document the societal-specific factors related to adherence to routine non-pharmacologic interventions among patients with chronic illnesses attending Luweero HC IV.

## METHODOLOGY.

*The methodology described is similar to that one published by (Nakimera&Serunjogi,2023) who documented the personal factors related to adherence to routine non-pharmacological interventions among patients with chronic illnesses attending Luweero HC IV.*

### Study area.

This study was conducted at Luweero Health Centre IV located in Luweero District, Uganda.

### Research Design.

In this study, a cross-sectional survey design was adopted using mixed methods. This design was chosen because it samples a population and makes measurements at one single point in time (Suresh, et al., 2012). The design in addition was chosen because it saves time and also resources. By the likes of Howe, et al., (2012), the attrition rates are eliminated in comparison to cohort studies.

### Study population.

Patients with Chronic Illnesses accessing services at Luweero Health Centre IV.

### Inclusion & exclusion criteria.

### Inclusion.

All out-patients with Chronic Illnesses who have spent at least 2 years in care and consent to the study were included to participate. Patients below eighteen 18 years old with an adult caregiver were also included.

### Exclusion.

All those who were too sick to respond were excluded.

### Sample size.

The total target population of the total Patients with Chronic Illnesses visiting Luweero Health Centre IV for non-pharmacological interventions is 82 per week. This translates to 328 patients in the month in which the data was collected. The determination of the sample size (n) from this population followed a sample determination formula as put by Kish Leslie (1965).

$$n = \frac{n_1}{1 + \frac{n_1}{N}}$$

$$Where\ n_1 = \frac{Z^2_{\alpha/2}\ pq}{e^2}$$

$Z_{\alpha/2}$ is the standard normal variate at 95% confidence interval = 1.96

N is the total Patients with Chronic Illnesses visiting Luweero Health Centre IV for 4 weeks, constituting a month of the study time $82 * 4 = 328$.

e is the level of precision that's 5%. This significance level is chosen because it is the most used for such health-related public health studies.

P = 42% which is the prevalence of patients with chronic illnesses that adhere to routine Non-Pharmacological Interventions (Nakayaga et al., 2014). $Where\ n_1 = \frac{1.96^2 * 0.58\ (1 - 0.58)}{0.05^2}$

$= 374.325504$

$\approx 374$

Then I used Cochran's formula for finite population to calculate the study sample size. I took into consideration that the total number of clients attending chronic care clinics are 328

$n \approx$ 328 patients with chronic illnesses visiting Luweero Health Centre IV

### Sampling Technique.

In this study, a simple random sampling technique was used to select the patients visiting Luweero Health Centre IV. In this case, patients with chronic illnesses were continuously enrolled from the 20th of June 2018 to the 20th of July.2018 as they visited Luweero Health Center for chronic care. During the process of enrolling, only patients who met the inclusion criteria (all outpatients with chronic illness for two years in care) were consecutively enrolled until the sample size was reached. This sampling approach was chosen because it permits the inclusion of all available since the respondents were within a finite population.

### Purposive sampling.

This study also used purposive sampling to select 5 healthcare service providers in charge of the units or departments where chronic care is provided. This group of respondents provided qualitative data on factors related to routine nonpharmacological intervention among patients with chronic illness. This method was of choice because it permits obtaining information from only participants with the necessary knowledge about Non-Pharmacological Interventions that patients with chronic illnesses are receiving.

### Data collection instruments.

### Questionnaire.

In this study, the questionnaire was adopted as a data collection tool. This questionnaire was designed according to the study objectives and was researcher-

administered to patients with chronic illnesses. The first section of the questionnaire constituted the demographic characteristics while the other sections constituted questions concerning the study objectives. The motivation for this tool was that it permits the collection of a large amount of data in a relatively short period. Blood glucose monitoring and Physical activity were the interventions recommended to manage diabetic, and hypertensive patients here but other nonpharmacological interventions like dietary modifications and social interaction for HIV patients.

**Key informant interview.**

Key informant interviews were conducted with the consenting health service providers who were purposively selected to provide the required information on routine non-pharmacological interventions. It involved a face-to-face discussion with healthcare providers using a key informant guide. This tool was chosen because it offers the greatest flexibility in gathering participant information. The motivation for this method was also based on the fact that it allows freedom for both the interviewer and the interviewee to explore additional points and change direction, if necessary. Specifically, this approach was used to elicit an expert understanding of Non-Pharmacological Interventions and what explains routine adherence among the targeted patients.

**Table 1. Data collection methods, sources, and tools for data collection.**

| Objective | Variable | Source of data | Data collection method | Tool for data collection |
|---|---|---|---|---|
| To determine the societal-specific factors related to adherence to routine non-pharmacologic interventions among patients with chronic illnesses | Societal-specific factors related to adherence to non-routine non-pharmacologic interventions among patients with chronic illnesses | Patients attending the clinic with chronic illness | Interviews | Semi-structured interviews- for …… patients |
| | | Selected community members | FGD | FGD guide |

**Quality control.**

A pre-test was undertaken among 20 Patients with Chronic Illnesses visiting Mityana Hospital to keep the main study respondents from Luwero Health Center IV intact. Feedback on the tools resulted in refining it removing ambiguous questions and thus enhancing validity. In addition, the questionnaires were given to *healthcare* experts who rated the relevance of each of the questions in the instrument concerning the study objectives. The Content Validity Index (CVI) will then be computed from the following formula.

$$\text{CVI} = \frac{x}{N}$$

Where x is the total number of questions in the questionnaire that was declared valid by judges and N is the total number of questions in the questionnaire. After each of the experts has rated 4 or 5 for each of the questions, a computed CVI equal to or above 0.7 implied that the tool captures what it professes to capture.

In addition, two research assistants were recruited and trained on data collection techniques and meanings for each technical term clarified for them for uniformity. For purposes of maintaining consistency and minimizing interview bias, the Principal investigator was the only interviewer of the Key informants. Upon completion of each interview, the responses were transcribed.

Different from validity, the reliability of the questionnaire was determined by measuring the internal consistency among questions on the questionnaires using Cronbach'sAlph. Cronbach's Alpha coefficient was determined as the measure of the extent to which all the variables in the scale are positively related to each other as per the following formula:

$$\alpha = \frac{(N \times r)}{(V + (N-1) \times r)}$$

Where N is the number of questions in the questionnaire and r is the average correlation among all pairs of variables, and v is the average variance. The values of $\alpha$ ranged from 0 to 1, and a value of alpha greater than 0.7 indicated that the tool is reliable.

**Data Analysis.**

**Quantitative data analysis.**

The data was entered and analyzed using Statistical Package for Social Sciences (SPSS-Version 20). Frequent tables were used at the Univariate analysis level for the demographic characteristics of the patients with chronic illnesses.

Pearson Chi-square analysis alongside cross-tabulations was undertaken. All predictors that showed a *p*-value less than 5% significance level were considered significant and thus the associated at bivariate analysis level. The binary logistic regression analysis was undertaken at the multivariate analysis level to establish the independently associated factors related to adherence

to routine -non-pharmacological interventions among patients with chronic illnesses.

### Qualitative data analysis.

The qualitative data from the tape-recorded key informant interviews was transcribed. Following transcription, content analysis was adopted in the process of data analysis in which relevant transcribed narratives were highlighted and thus treated as codes. The groups of related codes were sorted into categories that describe the issue under study. During the analysis, each code was clearly defined independently from other codes, while categories were mutually exclusive and exhaustive such that all units examined fit into an appropriate category. These categories in an actual sense were called sub-themes, an implication that sub-themes capture several interrelated codes. In simple terms the analysis of the qualitative data started with the identification of codes from the narratives of the interviewees, related codes were grouped into Sub-themes and related sub-themes were grouped into main themes. The presentation of the main sub-themes and themes as per the study objectives were illustrated using quotations from the interviewees.

### Ethical adherence and approval.

In undertaking this study ethical approval was sought from the Uganda Martyrs University. During this process, an introductory letter after certification that the research study requirements had been met was provided. The process continued by seeking permission from the Administration of Luweero Health Centre IV. Thereafter patients with chronic illnesses were informed about the purpose of the study and their consent to participate in the study was also sought. To ensure confidentiality data collected was in such a way that identification numbers were used instead of names of the patients with chronic illnesses. The respect for participants was ensured by informing the participants that their participation is highly voluntary and they are free to withdraw from the study at any point they feel without any penalty. The data collected was kept in a securely locked Ward rope.

### RESULTS.

### Societal-specific factors relating to adherence to routine non-pharmacologic interventions.

**Table 2: Societal-specific factors and adherence to the routine non-pharmacologic interventions.**

| Societal specific factors | | Adherence to Routine Non-Pharmacological interventions | | O.R(95% CI) | P -value |
|---|---|---|---|---|---|
| | | Yes (%) | No (%) | | |
| **Cultural beliefs about illnesses** | Caused by witchcraft/In-laws/evil spirits | 33.3 | 66.7 | 0.172(0.334-0.089) | 0.000** |
| | Others | 74.4 | 25.6 | | |
| **Misconceptions** | Herbs and Traditionalist, treats it best | 36.2 | 63.8 | 0.363(0.728-0.181) | **0.004**\*\* |
| | Non-pharmacological treatment takes long | 61.0 | 39.0 | | |
| **Cultural Practices** | Take some herbs | 43.2 | 56.8 | 0.204(0.436-0.096) | **0.000**\*\* |
| | Others (Ritual performance by traditionalist/clan leaders) | 78.8 | 45.9 | | |

The study results about societal-specific factors show that adherence to routine non-pharmacologic interventions is lowest amongst patients with cultural belief that the illnesses are caused by witchcraft or evil spirits or in-laws 33.3% and highest amongst patients who have no cultural beliefs (74.4%). This difference in routine adherence is statistically significant (OR=0.172; 95% CI: 0.334-0.089; $p$ = 0.000).

Results also show that adherence is highest amongst patients who believe that Non-pharmacological treatment takes longer 61.0% and lowest amongst patients whose belief is that herbs and traditionalists treat best 36.2%. The variation in non-adherence is statistically significant (OR=0.363; 95% CI: 0.728-0.181; $p$ = 0.004).

The study findings indicate that adherence to routine non-pharmacologic interventions is lowest amongst patients whose cultural practices are ritual performances that are done on patients by traditionalists or clan leaders 43.2% and highest amongst patients whose cultural practices are taking herbs 78.8%. The variation in adherence to routine non-pharmacological interventions is statistically significant (OR=0.204; 95%

CI: 0.436-0.096; *p* = 0.000). This result was in agreement with the

**Similar findings were obtained from Focus Group Discussions.**

[21/11/18] …. "Some of the patients come in late after using herbs and have not worked. They tell you that they have been bewitched on land issues and some are in self-denial. We counsel them' FGD, Representative Quote.

[21/11/18] … "The problem is the influence in the community to visit traditionalists and some clan elders. They perform some cultural rituals on some of these

patients making them delay joining the interventions available.' FGD, Representative Quote.

[21/11/18] ... "In most cases, some of the patients with chronic illnesses think that those local herbs are better. They have this conception that the interventions will put them on make them weaken and not improve*"* FGD, Representative Quote.

[21/11/17] …" It is possible to visit two places in one week, but sometimes you miss after all that traditionalists and some clan elders are consulted once in a while not always. …. The performance of the cultural rituals occasionally requires that you don't go to the health facilities". FGD, Representative Quote.

**Table 3: Multivariate results using binary logistic regression model.**

| Factors | Outcome | Adherence to Routine Non-pharmacological interventions | | A.O.R (95%CI) | *P*-Value |
|---|---|---|---|---|---|
| | | Yes N (%) | No N (%) | | |
| **Marital status** | Unmarried | 39.2 | 60.8 | 0.434(1.110-0.169) | 0.081 |
| | Married | 65.6 | 34.4 | | |
| **Education level** | None educated | 34.0 | 66.0 | 0.268(.966-.075) | 0.044* |
| | Educated | 63.2 | 39.7 | | |
| | No | 37.6 | 62.4 | | |
| **Physical infrastructure accessibility** | Not easy | 13.8 | 86.2 | 0.244(1.076-.055) | 0.062 |
| | Easy | 62.4 | 37.6 | | |
| **Health services cost** | Affordable | 88.1 | 11.9 | 3.933(16.677-.927) | 0.063 |
| | Unaffordable | 43.0 | 57.0 | | |
| **Health workers unavailability** | Yes | 31.5 | 68.5 | 0.354(.908-.138) | 0.031* |
| | No | 71.1 | 28.9 | | |
| **Distance** | Up to 2Km | 31.4 | 68.6 | 0.746(2.517-.221) | 0.636 |
| | More than 2Km | 52.1 | 47.9 | | |
| **Cultural Practices** | Take some herbs | 57.5 | 42.5 | 2.355(11.304-.491) | 0.284 |
| | Others (Ritual performance) | 18.0 | 82.0 | | |
| **Misconceptions** | Herbs and Traditionalist, treats it best | 36.2 | 63.8 | 0.729(2.203-.241) | 0.575 |
| | Non-pharmacological treatment takes long | 61.0 | 39.0 | | |
| **Cultural beliefs about illnesses** | Caused by witchcraft/ evil spirits | 68.3 | 31.7 | 0.609 (1.658-0.224) | 0.332 |
| | Others | 22(25.0) | 66(75.0) | | |

*Source: Field data, 2018*

The study results at multivariate indicate that education level (AOR=0.268; 95% CI: 0.966-0.075; *p*= 0.044) was the only demographic factor independently associated with adherence to routine non-pharmacologic interventions among patients with chronic illnesses.
Study results also show the availability of health workers as being independently associated with adherence to routine non-pharmacologic intervention. (AOR=0.031; 95% CI: 0.908-0.138; *p* = 0.0310). Adherence to routine non-pharmacologic intervention is highest among patients

with chronic illnesses whose health workers are always available when they visit the health facility.

**DISCUSSION.**

The study found that none of the societal-specific factors influenced adherence to routine non-pharmacological interventions at the multivariate analysis level though prior results showed cultural beliefs that the illnesses were caused by witchcraft or evil spirits alongside cultural practices involving ritual performances

done on patients by traditionalists or clan leaders were influential societal specific factors at bivariate analysis level. These results are quite different from those earlier established by Okuno et al., (2008) that cultural beliefs about treatment were barriers to non-pharmacological interventions use. They are also incomparable to those earlier found by Loffler et al (2010) that patients and their families bring culture-specific practices related to concepts of health and illness influencing adherence. This variation could be attributed to the fact that Loffler looked at mental-related illnesses like Schizophrenia are different from the chronic illnesses that the current study concentrates on.

## CONCLUSION.

None of the societal factors at multivariate analysis were found not to have any impact on adherence to routine non-pharmacological interventions.

## RECOMMENDATION.

The non-pharmacologic interventionists should design and institute group visiting mechanisms, especially among patients who are unmarried if routine adherence is to be improved.

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## LIST OF ABBREVIATIONS AND ACRONYMS.

**AOR**    Adjusted Odd Ratio
**CI**      Confidence Interval
**FGD**    Focus Group Discussion
**HC**      Health Centre
**HC IV**  Health Centre four
**HIV**    Human Immune Deficiency Virus
**KI**      Key Informant
**KM**     Kilometer
**OR**      Odds Ratios

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