

Statistical Analysis of the Risk Factors Associated with Street Children's level of Interest to keep their Hygiene in Wolkite Town, Southern Ethiopia

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Abstract- Street children were a term for children experiencing homelessness who live on the street of a city, town or village. The main objective of this study was to identify the risk factors associated with interest of street children to keep their hygiene in Wolkite town. The target population for this study was street children in Wolkite town. Since the number of street children in the town was too small, we have not applied any of the sampling technique and have taken all the population subjects and we have got the data from 102 street children's out of 148 using self-administered questionnaire as an instrument of data collection from targeted population. Different statistical methods were used to analyze risk factor associated with interest of street children to keep their hygiene. We have applied the use of ordinal logistic regression analysis as method of statistical analysis taking manual backward elimination variable selection procedures. Among 102 respondents, 4 (3.9%) of them were children with high interest to keep their hygiene, 55 (53.9%) of them were children with medium interest to keep their hygiene and 43 (42.2%) were children with low interest to keep their hygiene. We concluded that, knowledge about STI and HIV transmission and prevention and reason of children to join the street life was found to be significantly affecting the interest of street children to keep their hygiene at 5% level of significance in Wolkite town. Hence everyone in the society including government agencies and NGOs must pay attention towards street children and look for ways to address their problems immediately.

Index Terms- Chi- Square, Hygiene, Ordinal Logistic Regression, Street Children, Wolkite

I. BACKGROUND OF THE STUDY

Street children were a term for children experiencing homelessness who live on the street of a city, town or village. Homeless youth were often called kids and street youth. The definition is contested, but many practitioners and policymakers use UNICEF's concept of boys and girls aged under eighteen years for whom "the street" including unoccupied dwellings and wasteland was become home or their source of livelihood and who was inadequately protected or supervised (Sarah *et al.*, 2009). Street children's were categorized as off street and on street that means who back to home at night and who stay on street at night respectively. Street children were used as a catch-all term, but

covers children in a wide variety of characteristics. Some street children, notably in more developed nations were part of a sub category called thrown away children, whom were children that have been forced to leave home. Thrown away children were more likely to come from single parent homes. They often are subject to abuse, neglect and exploitation (Flowers, 2010).

Street children could be found in a large majority of the world's cities, with the phenomenon more prevalent in densely populated urban hubs of developing or economically unstable regions, such as countries in Africa, Eastern Europe, and Southeast Asia (UNICEF, 2012).

According to a report from the consortium for street children, a United Kingdom-based consortium of related non-governmental organizations (NGOs), UNICEF estimated that 100 million children were growing up on urban streets around the world. Based on this estimate, 15 million of these are due to AIDS, and many more have been made vulnerable due to other cases. More recently the organization added, the exact number of street children is impossible to quantify (Sarah *et al.*, 2009).

Since most of African countries are developing countries, Street children's are found widely with an estimated 250,000 street children in Kenya and over 60,000 in the capital Nairobi (Cottrell, 2010).

According to the research conducted by UN World Poverty Index 2008, Sierra Leone was considered to be the poorest nation in the world. According to World Bank projections 2013/14 the current picture of Sierra Leone was ranked as the second fastest-growing economy in the world. Prevalent lack of child rights and extreme poverty remain widespread. According to a research of street children, there was close to 50,000 children relying upon the streets for their survival, a portion of them living full-time on the streets.

In sub-Saharan Africa, poverty, war, disease and broken homes were creating an environment in which millions of young people were turning their face to the streets. Of these, disease was one of the risk factors for youth on the streets of Africa. By 2010 HIV/AIDS would have an estimated 20 million children lost one or both parents, which was nearly twice the number of orphan in 2001 (UNICEF, 2003).

Since Ethiopia is one of the Sub-Saharan Africa countries, according to UNICEF and actively engaged NGOs, in Ethiopia, there were approximately 500,000-700,000 street children. Most of the Ethiopian street youth were involved in unhealthy

behaviors, such as smoking marijuana, drinking local drinks like “Tela, “tej”, “Areke” and chewing chat (UNICEF, 2003).

The street children were seen by many as worthless and many countries have used violent and punitive measures to eliminate them.

Wolkite is one of the towns which are found in SNNP Region in South-western Ethiopia. The number of children’s in Wolkite town, street were high. Hence, the increasing of street children in Wolkite town was due to urbanization. Based on this problem, we planned to conduct a study on the risk factors associated with level of interest of street children to keep their hygiene.

1.2. Statement of the problem

The children typically had accessed to neither health care nor education. Sometimes, they were subjected to violence in the home before joining the street. It is well known fact that street children were among the most vulnerable social group for poverty and under development in Ethiopia. In addition to these, Ethiopian children problems had been repeated by cyclical droughts, and recurrent famines, family strife and the infamous HIV/AIDS pandemic. All these factors have combined to make millions of children separated from their parents (Konstantin, 2004).

In SNNPS, the phenomena of street children had become the critical social problem of the towns in the region. The problem was mainly caused by poverty, rapid urbanization and family abuse (Azemraw, 2009). Even though there was no published data that indicates a rapid increase number of street children in SNNPS, Wolkite was one of the towns of the region encountering a growing of street children as high. The street children, who lived in Wolkite town, had no care, protection, supervision or direction from parents or responsible adults.

By realizing the overall nature of the problem, the aim of this study would be to determine and assess the risk factors associated with interest of street children to keep their hygiene in Wolkite town. The measure that was taken by community for solving the problem of street children was giving some needs like, food, cloth and others, instead of giving awareness to keep their hygiene. According to this problem, our study dealt with the magnitude of the problems and the root cause of the factors associated with interest of street children to keep their hygiene, using ordinal logistic regression model in Wolkite town.

1.3. Objectives of the study

The general objective of this study was to analyze the risk factor associated with interest of Street Children to keep their Hygiene in Wolkite town.

The specific objectives of our study are:

- To test the association between interest of street children to keep their hygiene (high, medium, low) and explanatory variables
- To determine the risk factors associated with interest of street children to keep their hygiene.
- To determine the level of interest of street children to keep their hygiene.

1.5 The scope of the study

This study was focused on identifying the factors that affected interest of street children to keep their hygiene (high,

medium, low) in all kebeles of Wolkite town. Therefore, the conclusion to be reached would reflect determinant and risk factors associated with interest of street children to keep their hygiene with a special reference to Wolkite town.

II. METHODOLOGY

2.1 Description of the Study Area

The study was conducted in Wolkite town which is located in South-western part of Ethiopia, in SNNP regional state, at the distance 158km from Addis Ababa. It is the capital city of Gurage zone. As the city is a developing town, many children were migrating from the rural area to the town and many of them were became street children. Therefore, this study considered the risk factors associated with interest of street children to keep their hygiene in Wolkite town.

2.1.1 Source of data

The targeted populations of this study were all street children in Wolkite town who would live in Wolkite town. The source of data for this study was street children in Wolkite town. The data was collected from street children in Wolkite town using questionnaire and interview. In this study we used both open and closed ended questionnaire to gather data from street children.

2.2 Method of data collection

The method of data collection in this study was by using structured self-administered questionnaire and interview. Once we decide what type of the study would be conducted, which was necessary to collect information about the concerned study. The relevant or necessary information for this study would take from primary data by questionnaire and interview. The data was used for this research project consisted of the number of street children lived in wolkite town.

2.3 Sampling design

2.3.1. Sampling Technique

Sampling technique is a system of taking small ratio of observation from large population with aim of getting information of those large populations from the sampled observation by using some statistical techniques. There are many random sampling techniques to determine the sampled observation. These are cluster, stratified, systematic, simple random sampling (SRS). However, in our study we do not use the above sampling techniques as our population is small to take a sample from it. Based on this reason we have included all the elements appeared in the study area.

2.4. Study Variable

2.4.1. Dependent variable

The dependent variable of this study was interest of street children to keep their hygiene classified as high, medium and low. High mean those children who have high interest to keep their hygiene, medium mean those children who have medium interest to keep their hygiene and low mean those children who have low interest to keep their hygiene.

High = 2
 Y_i = {Medium = 1}
 Low = 0

2.4.2. Independent variables

The independent variables of our study were age of children, sex, street life status, sleeping place, birth place, income sources, education level, interest to attend health education, knowledge about health information, knowledge about STI and HIV transmission and prevention, practicing method to prevent STI and HIV, reason to join the street life, meal taken by them per day, health condition, drug use, interest to use the drug and getting support and the detail of the explanatory variable and their coding's are depicted in Table 1A in the appendix.

2.5. Method of statistical analysis

The method of data analysis to be used for any study depends on the nature of the response variables incorporated and hence, two broad categories of statistics; classified as and inferential statistics was used for analyzing the data on street life of street children's level of interest to keep their hygiene.

Descriptive statistics deals with any method or procedures used to organize masses of numerical data in to a meaningful form by using various methods such as table, charts and graphs whereas inferential statistics includes the use of data from sample to make inference about a population from which the sample was drawn. The inferential statistics analysis involves with in this study were chi-square test of independence and ordinal logistic regression.

2.5.1. Chi-square test

Chi-square test of association is a method of analyzing categorical data that is obtain, in the form of counts. Chi-square test for association (independence) in a two way classification uses this procedure to test if the probability of items or subjects being classified for one variable depends on the other variable. The objective of chi-square test of independence is to test whether there was a relationship between two categorical variables or not.

The statistical test would be

$$x^2_{cal} = \sum_{j=1}^m \sum_{i=1}^n (o_{ij} - e_{ij})^2 / E_{ij} \dots \dots \dots (3.1)$$

Where, o_{ij}- is the observed class frequency
 e_{ij}-is expected cell frequency

The test x^2_{cal} with $x^2_{(c-1), (r-1)}$
 c- Number of column variables
 r- Number of row variables

Decisions; - if $x^2_{cal} > x^2_{(r-1)(c-1)}$ then reject Ho
 If $x^2_{cal} < x^2_{(r-1)(c-1)}$ then fail to reject Ho

P-value is the smallest level of the test for which the null hypothesis (Ho) is rejected. That is when p-value is greater than the significance level, Ho is not rejected

Since O_i and e_i are observed from a single sample of size n sum of the observed and expected class frequencies is the same that is

$$\sum_{i=1}^n O_i = \sum_{i=1}^n e_i = n \dots \dots \dots (3.2)$$

The hypothesis:
 H₀: there is no association between interest of Street Children to keep their Hygiene and all the other independent variables.
 H₁: there is an association between interest of Street Children to keep their Hygiene and all the other independent variables.

Assumption of chi-square

- The sample must be randomly selected from the population.
- The population must be normally distributed for the variable under study.
- The observation must be independent of each other.

2.5.2. Ordinal logistic regression

Ordinal logistic regression was a type of logistic regression analysis used, when the response variable is categorized more than two with having natural order or rank. That, we could rank the values, but the real distances between categories was unknown. Logit link function was used in the analysis because it was evenly distributed categories and was reasonable choices when the changes in the cumulative probabilities are gradual and logit involves all levels of the response and dichotomizes the response scale. Many variables of interest were ordinal that you can rank the values, but the real distance between categories was unknown. Ordinal logistic regression or (ordinal regression) was used to predict an ordinal dependent variable given one or more independent variables. This model will enable us to determine which of our independent variables (if any) had a statistically significant effect on our dependent variable. For categorical independent variables, we could interpret the odds that one "group" has a higher or lower score on our dependent variable. For continuous independent variables we were able to interpret how a single unit increase or decrease in that variable, is associated with the odds of our dependent variable having a higher or lower value. We could also determine how well our ordinal regression model predicts the dependent variable.

The ordinal logistic model

Data: (Y_i, X_{1i}, . . . , X_{ki}) for observations i= 1, . . . , n, where Y is a response variable with C ordered categories i or j = 1, . . . , C, and probabilities π(j) = P(Y = j) X₁, . . . , X_k are k explanatory variables Observations Y_i are statistically independent of each other The following holds for γ^(j) = P(Y_i ≤ j) for each unit I and each category j = 1, . . . , C - 1:

$$\log\left(\frac{y_i^{(j)}}{1 - y_i^{(j)}}\right) = \log\left(\frac{p(Y_i \leq j)}{p(Y_i > j)}\right) = \alpha(j) - (\beta_1 X_{1i} + \dots + \beta_k X_{ki}) \dots \dots \dots (3.3)$$

Assumptions of ordinal logistic regression

- The dependent variable is measured on an ordinal level.
- One or more of the independent variables are continuous, categorical or ordinal.
- No Multi-co linearity - i.e. when two or more independent variables are highly correlated with each other.
- Proportional odds - i.e. that each independent variable has an identical effect at each cumulative split of the ordinal dependent variable.

These assumptions should be tested in order to show if there is a violation assumption or not. If these assumptions are violated the results you get when running ordinal regression may not be valid.

2.5.2.1. Likelihood-Ratio Test

An alternative and widely used approach to test the significance of a number of explanatory variables is to use the likelihood ratio test. This is appropriate for a variety of types of statistical models. Agresti, 1990 argues that, the likelihood ratio test is better particularly if the sample size is small or the parameters are large. The likelihood-ratio test uses the ratio of the maximized value of the likelihood function for the full model (L₁) over the maximized value of the likelihood function for the simpler model (L₀). The likelihood-ratio test statistic equals:

$$-2 \log \left(\frac{L_0}{L_1} \right) = -2[\log(L_0) - \log(L_1)] \dots \dots \dots (3.4)$$

It is compared with a χ^2 distribution with 1 degree of freedom. This log transformation of the likelihood functions yields a chi-squared statistic.

2.5.2.2. Goodness of Fit of the Model

The goodness of fit measures how well the model describes the response variable. Assessing goodness of fit involves investigating how close values predicted by the model with that of observed values (Bewick, 2005).

2.5.2.3. Parameter Estimation for Logistic Regression

The maximum likelihood and non-iterative weighted least squares are the two most computing estimation methods used in fitting logistic regression model. In contrast, the maximum likelihood estimation method is appropriate for estimating the logistic model parameters due to this less restrictive nature of the underlying assumptions in this study the maximum likelihood estimation technique applied to estimate parameters of the model. Maximum the likelihood estimate (MLE) of θ is that value of θ that maximized link (θ): it is the value that made the observed data

the “most probable”. If they are identical independent distributions, then the likelihood simplified to:

$$\text{link}(\theta) = \prod_{i=1}^n f\left(\frac{x_i}{\theta}\right) \dots \dots \dots (3.5)$$

Rather than maximizing this product which could be quite tedious, we often used the fact that the logarithm is an increasing function so it would be equivalent to maximized the log likelihood:- $l(\theta) = \sum_{i=1}^n \log(f\left(\frac{x_i}{\theta}\right)) \dots \dots \dots (3.6)$

2.5.2.3. Parallel Lines Test

In ordinal logistic regression models, there is an important assumption which belongs to ordinal odds. According to this test parameters should not change for different categories. Also parameter estimations do not change for cut-off points. In an ordinal logistic regression, when the assumption holds for $j - 1$ logistic comparison in a J categorized variable α -1 cut-off points and $j - 1$ parameters are found. At this point ordinal logistic model differs from multinomial logistic regression (Kleinbaum *et al.*, 2010).

In a way, this test states that the dependent variable’s categories are parallel to each other. When the assumption does not hold, it means that there are no parallelism between categories. Likelihood Ratio Test, Wald Chi-Square test and the other related tests are used to test parallel lines assumption (Agresti *et al.*, 2002). In ordinal logistic regression, these tests examine the equality of the different categories and decides whether the assumption holds or not. If the assumption does not hold, interpretations about results will be wrong, therefore in order to find correct results alternative models are used instead of ordinal logistic regression models.

III. RESULT AND DISCUSSION

3.1. Descriptive Statistics and Inferential Statistics

The data gathered from respondents was analyzed using both descriptive and inferential statistics, by using SPSS software.

3.1. Descriptive Statistics

From the result in Table 4.1, out of 100% 0.98% were children with high interest to attend health education, 48% were medium interest children to attend health education and 50.98% were children with low interest to attend health education, 3.92% were children with high interest to keep their hygiene, 53.92% were medium hygiene children and 42.16% were children with low interest to keep their hygiene. For other variables descriptions detail was here below in Table 4.1.

Table 1 Descriptive statistics of demographic Variables

Variables	N	Percentage
Sex	Male	43 42.2%
	Female	59 57.8%
Birth place of respondent	Urban	96 94.1%
	Rural	6 5.9%
Income source of respondent	Labor work	40 39.2%
	Begging	48 47.1%

	Theft	14	13.7%
Education level of respondent	primary school	85	83.3%
	secondary school	3	2.9%
	Illiterate	14	13.7%
Sleeping place of respondent	Home	59	57.8%
	on the street	15	14.7%
	around building	28	27.5%

Table 2 Descriptive statistics of other Variables

Variables		N	Percentage
Interest of respondent to keep his/her hygiene	High	4	3.9%
	medium	55	53.9%
	low	43	42.2%
street life status of respondent	off street	59	57.8%
	on street	43	42.2%
interest of respondent to attend health education	high	1	1.0%
	medium	49	48.0%
	low	52	51.0%
knowledge of respondent to have health information	yes	36	35.3%
	low	66	64.7%
Knowledge of respondent about STI & HIV transmission and prevention	yes	65	63.7%
	no	37	36.3%
practicing method of respondent to prevent STI&HIV	yes	26	25.5%
	no	76	74.5%
Reason of respondent to join the street life	urbanization	10	9.8%
	peer influence	10	9.8%
	being orphan	36	35.3%
	poverty	32	31.4%
	family conflict	14	13.7%
meal taken by respondent per day	once	1	1.0%
	twice	45	44.1%
	three times	56	54.9%
Rate of health condition of respondent	fair	52	51.0%
	poor	50	49.0%
Drug use	yes	37	36.3%
	no	65	63.7%
Interest of respondent to use drug	non	65	63.7%
	high	5	4.9%
	medium	21	20.6%
Getting support	low	11	10.8%
	yes	55	53.9%
	no	47	46.1%
Total		102	100.0%

3.2. Inferential statistics

3.2.1. Chi-square test for association and cross tabulation

The association between dependent and independent variables among the statistical analysis about the risk factors associated with interest of street children to keep their hygiene in Wolkite town is tested by using chi-square test

As we can see from the result by Chi-square test of association in Table 4.2, there was statistically significant association between the Interest of street children to keep their hygiene with age of children, income sources, education level, interest to attend health education,

Table 4.2. Chi-Square Test Statistics of the Variables

Variables	Pearson chi-square	Degree freedom(d.f)	Sig
Age	110.690 ^a	26	.000
Birth place	5.448 ^a	2	.066
Income source	41.380 ^a	4	.000
Education level	76.984 ^a	4	.000
street life status	.922 ^a	2	.631
interest to attend health education	95.505 ^a	4	.000
knowledge about health information	38.490 ^a	2	.000
Knowledge about STI & HIV transmission and prevention	65.493 ^a	2	.000
practicing method to prevent STI & HIV	23.408 ^a	2	.000
Sleeping place	1.260 ^a	4	.868
Reason to join the street life	36.286 ^a	8	.000
meal taken per day	12.401 ^a	4	.015
Rate of health condition	6.738 ^a	2	.034
Drug use	37.427 ^a	2	.000
Interest to use drug	38.610 ^a	6	.000
Getting support	10.304 ^a	2	.006

knowledge about health information, knowledge about STI and HIV transmission and prevention, practicing method to prevent STI and HIV, reason to join the street life, meal taken by them per day, health condition, drug use, interest to use the drug and getting support. However, Street life statuses of children, birth place and sleeping place have no significant association with interest of street children to keep their hygiene.

4.2.2. Ordinal Logistic Regression Analysis

Logit link function is used in the analysis of distributed categories and is reasonable choices when the changes in the cumulative probabilities are gradual and logit involves all levels of the response and dichotomizes the response scale.

In the Parameter Estimates Table 3, for those covariates under the table, whose p- values were less than 5% they had statistically significant effect on the interest of street children to keep their hygiene ; otherwise not.

The estimate for [hygiene=1] is the cutoff value between low and middle hygiene and the estimate for [hygiene=2] represents the cutoff value between middle and high hygiene. For [hygiene=1] that was the estimated cut point on the latent variable used to differentiate low hygiene from middle and high hygiene when values of the predictor variables are evaluated at zero. The estimate that had a value of 2.819 or less on the underlying latent variable that gave rise to our hygiene variable would be classified as low hygiene given they were children with knowledge about STI & HIV transmission and prevention (the variable reason to join the street life evaluated at zero, its reference value). [Hygiene=2] –this is the estimated cut point on the latent variable used to differentiate low and medium hygiene from high hygiene when values of the predictor variables are evaluated at zero. Subjects that had a value of 23.397 or greater on the underlying latent variable that gave rise to our hygiene variable would be classified as high hygiene given they were children with knowledge about STI & HIV transmission and prevention and had zero reason to join the street life evaluated. Subjects that had a value between 2.819 and 23.397 on the underlying latent variable would be classified as medium hygiene.

Estimate- these are the ordered log-odds (logit) regression coefficients. Interpretation of the ordered logit coefficient was that for one unit increase in the predictor, the response variable level was expected to change by its respective regression coefficient in the ordered log-odds scale while the other variables in the model were hold constant.

Odds ratios of the predictors can be calculated by exponentiation the estimate.

Knowledge about STI & HIV transmission and prevention- That was the ordered log-odds estimate for one unit increase in knowledge about STI & HIV transmission and prevention on the expected hygiene level given the other variables were held constant in the model. If a subject were to increase their knowledge about STI & HIV transmission and prevention, their ordered log-odds of being in a medium to low hygiene category would decrease by $\exp(-14.8900)=3.41 \times 10^{-7}$.

Reason to join the street life-That was the ordered log-odds estimate for one unit increase in reason to join the street life on the expected hygiene level given the other variables were held constant in the model. A one unit increase in reason to join the street life would result in an $\exp (-1.456) =0.233$, One unit

decrease in the ordered log-odds of being in a medium to low hygiene category while the other variables in the model are held constant.

The wald test statistic for knowledge about STI & HIV transmission and prevention was 4.104 with an associated p-value of 0.043. If we set our alpha level to 0.05, we would reject null hypothesis and conclude that the regression coefficient for knowledge about STI & HIV transmission and prevention had been found to be statistically different from zero in the estimating hygiene given reason to join the street life in the model.

The wald test statistic for reason to join street life was 4.193 with an associated p-value of 0.41. If we set our alpha level to 0.05, we would reject null hypothesis and conclude that the regression coefficient for reason to join street life had been found to be statistically different from zero in the estimating hygiene given knowledge about STI & HIV transmission and prevention.

Stepwise: in statistics, stepwise regression is a method of fitting regression model. There are two types of stepwise regression model; these are forward selection and backward elimination. Forward selection involves starting with no variables in the model and testing the backward, which involves starting with all candidate variables. In the model below we used backward

elimination to eliminate variables with high p-values and until getting final model with significance variables.

Steps of backward elimination for finding final model:

$$Y_i = 2.819 + 23.397 + 1.433ag + 0.119incs + 3.220grdl - 11.881itahed - 1.111 khinf n - 14.890 kstin hiv + 2.752 pracmthod - 1.456 resjntstrt + 0.600 eatprdy - 2.615hcondn + 22.361du + 6.545dintrst - 0.319sprt$$

$$Y_i = 2.819 + 23.397 - 14.890 kstin hiv - 1.456 resjntstrt \dots \dots \dots (4.1)$$

In these coefficients the negative sign indicates that those variables have negative effects on the interest of street children to keep hygiene from table 4.3. Knowledge about STI and HIV transmission and prevention and reason of children to join the street life are the variables of negative effects on the interest of street children to keep their hygiene. Based on the small observed significance level; we can reject the null hypothesis that it is zero.

Table 4.3. Parameter Estimates of the Final model

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[Hygien = 1]	2.819	22.388	.016	1	.900	-41.061	46.699
	[Hygien = 2]	23.397	25.781	.824	1	.364	-27.133	73.926
	Age	1.433	.808	3.142	1	.076	-.151	3.017
	Incomesource	.119	1.112	.011	1	.915	-2.060	2.297
	Gradelevel	3.220	2.966	1.178	1	.278	-2.593	9.033
	Interest	-11.881	6.951	2.921	1	.087	-25.505	1.743
Location	KhealthInf n	-1.111	1.980	.315	1	.575	-4.990	2.769
	KSTINHIV	-14.890	7.350	4.104	1	.043	-29.294	-.485
	pracmthod	2.752	2.567	1.149	1	.284	-2.280	7.784
	Resjntstrt	-1.456	.711	4.193	1	.041	-2.850	-.062
	Eatprdy	.600	1.776	.114	1	.735	-2.880	4.081
	Hcondition	-2.615	1.878	1.938	1	.164	-6.296	1.067
	druguse	22.361	13.909	2.585	1	.108	-4.900	49.622
	DrugIntrst	6.545	4.561	2.059	1	.151	-2.394	15.484
Support	-.319	1.803	.031	1	.860	-3.852	3.215	

3.3. Model Adequacy Checking

Looking at the model fit in Table 4.we can see a highly significant reduction in the chi-square statistics value of p<.005. So, the model shows a clearly significant improvement over the baseline or intercept only model.

Table 4.Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	134.403			
Final	41.764	92.639	7	.000

However the goodness-of-fit statistics in Table 5 suggests the model fit the data fits well. Our analysis suggest the model does fit very well ($p > 0.05$) (i.e. Fail to reject the null hypothesis depending on the observed data). Also the model fits adequately.

Table5 Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	23.726	41	.986
Deviance	25.959	41	.968

Pseudo values (Nagelkerke = 99.7%) indicates that there was relatively small proportion of the variation in assessment for the predictor.

Table 5. Pseudo R-Square		
Cox and Snell	Nagelkerke	McFadden
.806	.997	.992

The test of parallel lines in Table 6 the null hypothesis of the assumption of proportional odds. The null hypothesis states that the location parameters (slope coefficients) are the same across response categories. We fail to reject the null hypothesis; we conclude that the assumption holds.

Table 6. Test of Parallel Lines

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis General	41.764 .000 ^b	41.764	7	.000

IV. DISCUSSION OF THE RESULTS

The findings indicate that the knowledge about STI and HIV transmission and prevention and reason of children to join the street life have significantly with the interest of street children to keep their hygiene. Knowledge about STI and HIV transmission and prevention and reason of children to join the street life were the variables with negative effect on the interest of street children to keep their hygiene. Based on the chi-square results, the variables like; age of children, income sources, education level, interest to attend health education, knowledge about health information, knowledge about STI and HIV transmission and prevention, practicing method to prevent STI and HIV, reason to join the street life, meal taken by them per day, health condition, drug use, interest to use the drug and getting support were significantly associated with interest of street children to keep their hygiene. However, Street life statuses of children, birth place and sleeping place have no significant association with interest of street children to keep their hygiene. By taking the variables with significant association with interest of street children to keep their hygiene in chi-square result and check their levels using ordered log-odds, we found knowledge about STI and HIV transmission and prevention and reason of children to join the street life that were significant effect on dependent variable. But the others like, age of children, income sources, education level, interest to attend health education, knowledge about health information, practicing method to prevent STI and HIV, meal taken by them per day, health condition, drug use, interest to use the drug and getting support had no significant effect on dependent variable. By relating this study with other studies that were discussed in literature review, like the study conducted in Addis Ababa by

Demelash *et al.*, 2013 on Assessment of Sexual and reproductive health status of street children by using binary logistic regression model, showed that females were sexually active than males and females tended to have multiple sexual partners. More than half of the street children did not attend any kind of sexual or reproductive health education programs. According to the interviewed responses and results of test, males have no more information on available services than females. The overall male to female ratio of 3:1 were “on the street” type while the rest were “off the street” type. The reasons mentioned by the researcher or causes to join the street life are job searching, peer influence, family disharmony, orphaned, poor family and alcoholic parents. The above reasons pushed children mainly boys to engage in street activities. Almost one-third of street children claimed to have been supported by one organization at least once, but they had left and come back to the streets. The remaining never been helped and were using the service.

The study conducted by Genet on factors associated with Orphans and Vulnerable Children in Organization for Social Service of AIDS (OSSA) in Hawassa, using binary logistic regression showed that the factors such as education level, sex, peer influence, shelter, sexual activity and reason of joining the street had statistically significant effect on status of street children and other variables were insignificance (Genet, 2014).

The other study conducted by Alemu *et al.*, in 2014 on the magnitude of the problem and risk factor associated with street life of street children in Gondar. Using binary logistic regression model showed that, the factors such as gender, school attendance, shelter, sexual activity and reason of joining the street had

statistically significant effect on the life of street children. In general, the consequence of “on” the street is greater than that of “off” the street.

V. CONCLUSIONS AND RECOMMENDATION

5.1. Conclusions

The main objective of this study was to analyze the risk factors associated with interest of Street Children to keep their Hygiene in Wolkite town. In this analysis we had looked at regression models that could be applied when our outcome was represented by an ordinal variable. Furthermore, the findings indicated that the interest of street children to keep hygiene is associated with knowledge about STI and HIV transmission and prevention and reason of children to join the street life at 5% level of significance.

Hence, we conclude that knowledge about STI and HIV transmission and prevention and reason of children to join the street life was found to be significantly associated with the interest of street children to keep their hygiene at 5% level of significance in Wolkite town.

5.2. Recommendation

Based on finding result of the study the following recommendations were forwarded to:

- Government, NGOs and concerned bodies have to play important roles to give awareness to street children about STI and HIV transmission and prevention.
- Government agents, NGOs, religious institution and even individuals should have to straggles to avoid the causes of reasons of children to join the street life.
- Further study in the area should be conducted including the possible covariates in to account in the study.

VI. ACRONYMS

AIDS: Acquired Immune Deficiency Syndrome, HIV: Human Immune Virus, NGOs: Non-governmental Organizations, O SSA: Organization for Social Service of AIDS, RA: Rehabilitation Agency, SNNP: South Nation Nationality and People, SRH: Sexual and Reproductive Health, STDs: Sexual Transmitted Diseases, UN: United Nation, UNICEF: United Nation’s International Children Emergency Fund.

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