

# Risky Sexual Behaviour of Adolescents in Western Province of Sri Lanka

<sup>1</sup>AANR Amarakoon, <sup>2</sup>KMUB Konarasinghe, <sup>3</sup>WGS Konarasinghe

Institute of Mathematics and Management, Ranala, Sri Lanka

---

**Abstract:** As for many adolescents are not so educated, risky sexual behavior is one of the main unhealthy behaviors in which adolescents don't know the risks of. Literature revealed risky sexual behaviour of adolescents is associated with source of knowledge and other factors associated with risky sexual behavior was age, parents and media. Chi square test, t-test, systematic kth case, logistic and poisson regression analytical techniques were techniques from literature. A sample of 101 randomly selected adolescents of public and private schools of Western Province of Sri Lanka. A self-administrated questionnaire was used for data collection. The questionnaire confirmed the reliability and validity. Both descriptive and inferential statistics used for data analysis. The Z-test and t-test test was used for hypothesis testing. The Z-test and t-test test was used for hypothesis testing. The descriptive statistics indicated that, 7.9% of adolescents have taken part in risky sexual activities and around 50% of adolescents get their knowledge about sexuality from school. Inferential Statistics was obtained for proportion of adolescents who have taken part in risky sexual activities. The results show that the proportion male and female adolescents involved in risky sexual behaviour were equal. And risky sexual behaviour in public and private schools were equal. In conclusion, about half of adolescents get their source of knowledge about sexuality from school. And risky sexual behaviour between male and female adolescents, and public and private schools are not different. The results of this study can be taken for the prevention of adolescent's risky sexual behavior.

**Keywords:** Adolescents, behavior, Z-test, t-test.

---

## I. INTRODUCTION

### Background of the study:

Adolescents are ages varying from 13 to 20 years. Some adolescents who are at high risk for unhealthy behaviors for they may copy what see for the same reasons or out of curiosity. The well-being of adolescents shaped by the role of parents and family (Thalagala, Rajapakse and Yakandawala 2004). Therefore, they still require special attention and guidance from adults, since they are still developing. Most adolescents progress to adulthood with quite little effort, undergoing excellent physical health and strength and not engaging in unhealthy behaviors that put themselves or others at risk. Risky sexual behavior is one of the main unhealthy behaviors of adolescents as for many are not educated and not knowing the risks of it, mainly teenage pregnancies and Sexually Transmitted Disease/Sexually Transmitted Infections (STD/STI's). Only 57% of adolescents in Sri Lanka were aware of STDs and awareness of symptoms of STDs were less than 20% (Thalagala, Rajapakse and Yakandawala 2004). 15 million adolescents under the age of 20 give birth around the world, which represents one-fifth of all births (Johnson, Myers and Langdon 2001). Raj, Rabi and Amudha (2010) found that poor education low socio-economic status and family to be associated to teenage pregnancy in South Asian countries. Around 80% of adolescents in Sri Lanka had gained knowledge about sexual health from school (Perera and Reece 2006).

### Research Problem:

In Sri Lanka, around 50% of adolescents who are pregnant are under 18 years (Dulithu, G. Nalika, S. Upul, et al 2013). Also, around 50% of new HIV infections around the world happen among people at age 15-24 years. And in Sri

## International Journal of Novel Research in Physics Chemistry & Mathematics

Vol. 5, Issue 3, pp: (1-9), Month: September - December 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

Lanka it was estimated that 0.02% of males and 0.03% of females among adolescents had HIV (WHO, 2006). Literature reveal that there are so many factors influences for risky sexual behaviour. Oluwatoyinand Modupe (2014) found age and parents are associated with risky sexual behavior. Amoateng, Kalule-Sabiti and Arkaah (2014) noted then as source of knowledge and media. Nwankwo and Nwoke (2009) discovered them to be source of knowledge about sexuality. Klein, Brown, Dykers, et al (1993) noticed risky behaviours are associated with media. With that, finding the reasons are vital to minimize the destruction to the adolescents.

### Significance of the Study:

The results of the study will be a light house for better development of the future of adolescents. This study will fill the knowledge gap and paw the path for identifying reasons for risky sexual behaviour in Western Province of Sri Lanka. The results of this study can be taken as a guideline for policy and strategy developments to overcome this issue.

### Objective of the Study:

- i. To find the proportion of adolescents who have took part in risky sexual activities.
- ii. To compare the risky sexual activities of adolescents by gender.
- iii. To compare the risky sexual activities of adolescents by type of school.

## II. LITERATURE REVIEW

Oluwatoyin and Modupe (2014), explored the causes and several factors contributing to risky sexual behaviour among adolescents in Ibadan North Local Government Area, Nigeria. The dependent variable is risky sexual behaviour. And independent variables are family's socio-demographic characteristics, knowledge about sex education, information on awareness of sex education, knowledge about reproduction and attitudes about sexual behaviour. Chi square test and paired t-tests were used. The results reveal that it's unlikely that boys and young men between ages of 15 and 24 years are responsible for high proportion of teenage pregnancies. The study also showed that more than three quarter of the respondents had their parents as their primary caregivers of which the majority were involved in risky sexual behaviour, while relatives and guardians provide care for only very few of the respondents. The objective of Amoateng, Kalule-Sabiti and Arkaah (2014) was to examine the impacts of socio-demographic factors on risky sexual behaviour of adolescents in North Western province of South Africa. Logistic and Poisson regression analytical techniques were used. The study revealed that adolescent males in grade 11 are more likely to report risky sexual behaviours. Further, parental norms, school education, peer influence, media and religion all affects adolescent's development. Klein, Brown, Dykers, Chiders, Oliveri and Porter (1993), wanted to understand the association between risky behaviour and use of mass media of adolescents. A sample of 14-16-year-old adolescents were taken from urban areas in the South-Eastern United States. After the analysis was one it was found that adolescents who watched movies, music videos and listened to radio were more involved in risky behaviours. Nwankwo and Nwoke (2009) examined the risky sexual behaviours of adolescent in Owerri Municipal in Imo State, Nigeria as it is not properly studied. Sample of adolescents between 10-19 years were taken from 9 government schools. Systematic k<sup>th</sup> case was used. They found that 47.46% of adolescents have had sex and 12.6% never used condom. Furthermore, the main source of knowledge about sexuality was by peers. Summarizing the above literature, use of Chi square test, t-test, systematic k<sup>th</sup> case, Logistic and Poisson regression analytical techniques resulted is risky sexual behaviour of adolescents been associated with source of knowledge. Other factors associated with risky sexual behavior were age, parents and media.

## III. METHODOLOGY

### 3.1 Variables of the Study:

The variables for this study were selected with the help of literature. The variables are source of knowledge, demographic variables and risky sexual behaviour. Further, demographic variables consist of age, gender and type of school. And source of knowledge consist of media, friends, family and school.

### 3.2 Operationalization:

Adolescents of Western province of Sri Lanka were the population of the study. Multistage sampling technique was used in the data collection. In stage one, two famous higher education institutes were selected by judgment. The selected institutions are; Shakthi Institute and Sakya Academy of Higher Education. Shakthi Institute conducts tuition classes for

London GCE ordinary level and GCE advanced and Sakya Academy of Higher Education conducts tuition classes for local ordinary level and advanced level. A self-administered questionnaire was used for data collection. The measurement of the questionnaire is ordinal and nominal. A systematic sampling technique was adopted to select the participants, a sample of 101 adolescents was asked to fill the questionnaire. Cronbach's Alpha Test used to test the reliability and confirm validity of the questionnaire. Both descriptive and inferential statistics used for data analysis.

### 3.3 Confidence Intervals for Population Proportion:

The confidence intervals in an interval estimate of an unknown population parameter. It is a random interval constructed, so that it has a given probability of including the parameter.

For example; consider a population with unknown parameter  $\theta$ . If the confidence interval (a, b) such that;  $P(a < \theta < b) = 0.95$ , we can say that (a, b) is a 95% confidence interval for  $\theta$ . It means there is a 95% chance for  $\theta$  to lie between a and b.

Consider a binomial population, where  $p$  (the proportion of successes in the population) is unknown.

$$X \sim B(n, p)$$

Take a random sample of  $n$  from the population and let  $p_s$  be the random variable (the proportion of successes in the sample).

If  $n$  is large and  $p$  is small, the distribution 'X' will be approximately normal, with mean  $\mu$  and variance  $\sigma^2$ .

Where  $\mu = np$

$$\sigma^2 = np(1-p)$$

Then, confidence interval for  $p = p_s \pm Z_{\alpha/2} \sqrt{\frac{p_s q_s}{n}}$

Where,  $Z_{\alpha/2}$  = Critical value of the distribution

$$q_s = 1 - p_s$$

### 3.4 Hypothesis Test for Population Proportion:

Suppose we test whether a sample value  $x$  could have been drawn from a normal population with mean  $\mu$  and variance  $\sigma^2$ . Assume the sample is from a normal population. This hypothesis is called the null hypothesis, denoted by  $H_0$ . If statistical tests show that null hypothesis is rejected, we favour the alternative hypothesis, denoted by  $H_1$ .

We may wish to test whether a random sample of size  $n$  with proportion of successes  $p_s$  could have been drawn from a population of successes  $p$ .

The sampling distribution of proportions gives

$$P_s \sim N\left(p, \frac{pq}{n}\right)$$

Where  $q = 1 - p$ , and  $n$  is large.

Let  $H_0: p = p_0$

$H_1: p \neq p_0$  or  $p < p_0$  or  $p > p_0$

The test statistic  $z = \frac{p_s - p}{\sqrt{\frac{pq}{n}}}$

Significance level is denoted by  $\alpha$ . Accordingly,  $Z_\alpha$  can be found from the normal distribution table. If test statistic  $> Z_\alpha$ .  $H_0$  is rejected.

### 3.5 Hypothesis Test for Comparing Population Proportions:

Consider two random samples, sizes  $n_1$  and  $n_2$ , with proportion of successes,  $p_{s1}$  and  $p_{s2}$ . If the population proportions are  $p_1$  and  $p_2$  and the samples are large then,

$$P_{s_1} \sim N \left( p_1, \frac{p_1 q_1}{n_1} \right) \text{ Where } q_1 = 1 - p_1, \text{ and } n \text{ is large.}$$

$$P_{s_2} \sim N \left( p_2, \frac{p_2 q_2}{n_2} \right) \text{ Where } q_2 = 1 - p_2, \text{ and } n \text{ is large.}$$

$$\text{So, } P_{s_1} - P_{s_2} \sim N \left( p_1 - p_2, \frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2} \right)$$

This is to test whether the samples have been drawn from populations with a common proportion  $p$ .

$$\text{Then, } P_{s_1} - P_{s_2} \sim N \left( 0, pq \left( \frac{1}{n_1} + \frac{1}{n_2} \right) \right) \text{ where } q = 1 - p$$

$$\text{Test statistic } z = \frac{p_{s_1} - p_{s_2} - (0)}{\sqrt{pq \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$H_0: p_1 = p_2$$

$$H_1: p_1 \neq p_2$$

Significance level =  $\alpha$

If test statistic  $Z > Z_{\alpha/2}$ ,  $H_0$  is rejected.

Repeat the hypothesis for  $H_1: p_1 < p_2$  or  $H_1: p_1 > p_2$  to find which proportion is greater or smaller.

## IV. ANALYSIS

Data analysis consist three parts;

- i. Testing internal consistency of the questionnaire.
- ii. Descriptive statistics.
- iii. Inferential statistics.

### Testing Internal Consistency of the Questionnaire:

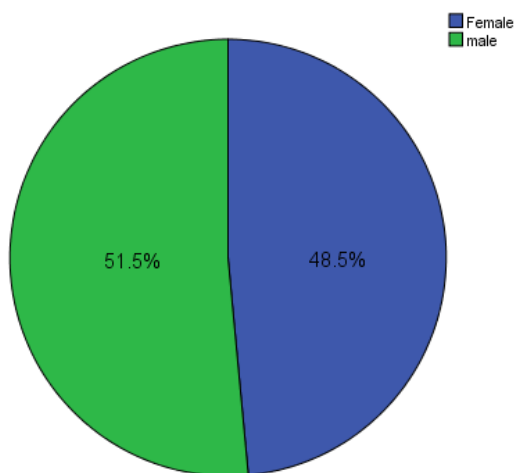
Internal consistency of the questionnaire was first tested after the pilot survey, and then necessary adjustments were done. Then, the internal consistency was pre-tested after the data collections of the study. The internal consistency was assessed by inter item consistency using the statistical tool Cronbach's Alpha Co-efficient. Questionnaire was distributed among 25 adolescents on the pilot survey. The Cronbach's Alpha was found to be 0.744. Then the questionnaire was distributed among 101 adolescents and, Cronbach's Alpha was found to be 0.745. Therefore, the questionnaire is acceptable and valid.

**Descriptive Statistics:**

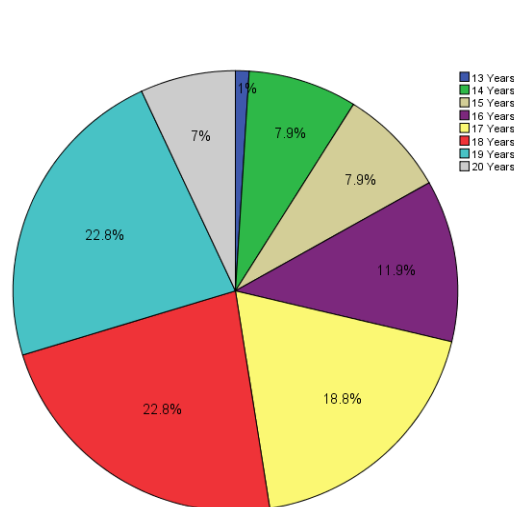
Descriptive statistics of the study categorized as follows.

- i. Demographic Variables.
- ii. Risky Sexual Behavior.
- iii. Source of Knowledge.

**Demographic Variables:**

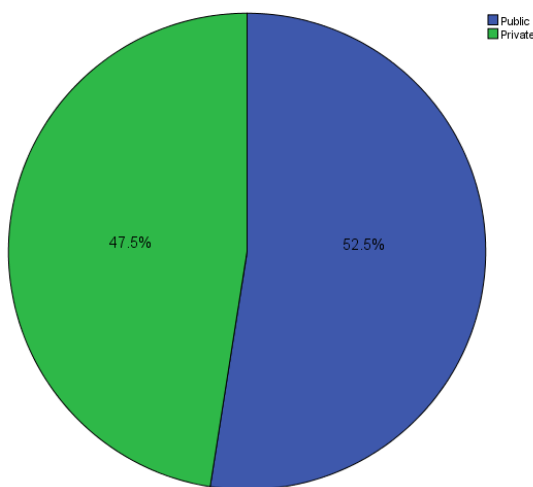


**Fig 1: Sample by Gender**



**Fig 2: Sample by Age**

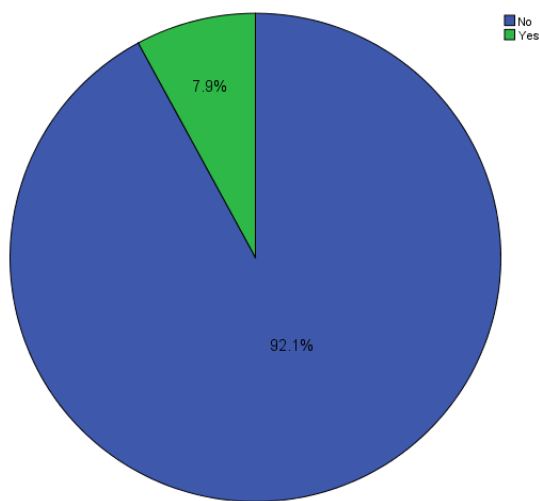
Fig.1, is the gender of adolescents in the sample. It is noticed that majority of (51.5%) of adolescents belong to male category and 48.5% belong to female category. Fig.2 summarizes the age of adolescents in the sample. Around 1% of adolescents in study are 13 years old, 7.9% are 14 years old, 7.9% are 15 years old, 11.9% are 16 years old, 18.8% are 17 years old, 22.8% are 18 years old, 22.8% are 19 years old, and 7% are 20 years old.



**Fig 3: Sample by Type of School**

Fig. 3 summarizes the type of school of adolescents in the sample. Majority of 52.5% of adolescents belong to public schools and 47.5% belong to private schools.

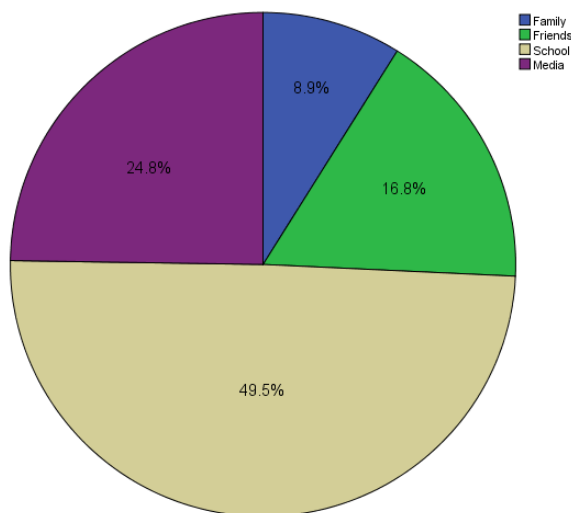
**Risky Sexual Behaviour:**



**Fig 4: Sample by Taking part in Risky Sexual Activity**

The summary of Fig.4 indicates that 7.9% of adolescents have taken part in risky sexual activities, while 92.1% have not.

**Source of Knowledge:**



**Fig 5: Sample by Source of Knowledge about Sexuality**

The summary of Fig.5 illustrates that 8.9% of adolescents get their source of knowledge about sexuality from their families, 16.8% get it from their friends, 49.5% get it from school, and 24.8% from media.

**Inferential Statistics:**

Statistical inference can be defined as the process by which conclusion are drawn about some measure or attributes of a population based upon analysis of sample data. Statistical inference can be divided into 2 types; estimation and hypothesis testing. In sample proportions of following variables were obtained;

$R$ : No. of adolescents who have ever involved in risky sexual activities.

$R_m$ : No. of males who have ever involved in risky sexual activities.

$R_f$ : No. of females who have ever involved in risky sexual activities.

**Inferential Statistics for Proportion of Adolescents who have taken part in Risky Sexual Activities:**

Let  $p$  = population proportion of adolescents “ever took part in risky sexual activities”

$p_s$  = sample proportion of adolescents “ever took part in risky sexual activities”

$$(1-\alpha) \% \text{ confidence interval for } p = P_s \pm Z_{\alpha/2} \sqrt{\frac{P_s q_s}{n}} \quad (1)$$

Where:  $Z_{\alpha/2}$  = critical value of standard normal distribution,  $q_s = 1 - p_s$ ,  $n$  = sample size

Hence the 95% confidence interval for  $p = (0.026539, 0.131877)$ , approximately  $p = (0.03, 0.13)$ . The 95% CI for population proportion of ever took part in risky sexual activities is (3%, 13%). It means, there is a 95% chance the population proportion is between 3% and 13%. The random variable, “number of adolescents who ever took part in risky sexual activities” ( $R$ ) can be modeled by the binomial distribution due to following reasons.

- i. Either an adolescent has taken part in risky sexual activities or not. It means each trail has 2 possible outcomes
- ii. There were 101 participants in the study (no. of trails is fixed)

Assuming adolescents taking part in risky sexual activities are independent from each other and setting  $p = 0.03$

$$A \sim B(101, 0.03)$$

According to the central limit theorem, normal approximation to Binomial distribution will be appropriate when  $n$  is large, and  $p$  is small. Hence,  $R \approx N(\mu, \sigma^2)$

Where  $\mu = np$

$$\sigma^2 = np(1-p)$$

At first, following hypothesis was tested at  $\alpha = 5\%$

$$H_0: p = 0.03$$

$$H_1: p > 0.03$$

The null hypothesis can be rejected, if the  $p$  - value of the test is less than the significance level. In this case  $p$  - value = 0.002, it is less than  $\alpha = 0.05$ . Therefore,  $H_0$  is rejected. At 5% significance level, there is evidence to say that the population of “adolescents who ever took ever took part in risky sexual activities” is greater than 3%. Then, following hypothesis was tested, assuming population proportion = 0.04

$$H_0: p = 0.04$$

$$H_1: p > 0.04$$

The  $p$  - value of the study (0.022) is less than the significance level (0.05). Therefore,  $H_0$  is rejected. At 5% significance level, there is evidence to say that the population of “adolescents who ever took part in risky sexual activities” is greater than 4%. Therefore, following hypothesis was tested, assuming population proportion = 0.05

$$H_0: p = 0.05$$

$$H_1: p > 0.05$$

The  $p$  - value of the study (0.089) is greater than the significance level (0.05). Therefore,  $H_0$  is not rejected. At 5% significance level, there is evidence to say that the population of “adolescents who ever took ever took part in risky sexual activities” = 5%

**Comparison of Population Proportions by Taking part in Risky Sexual Activities by Gender:**

Sample Proportion of females taking part in risky sexual activities = 6/49, sample Proportion of males taking part in risky sexual activities = 2/52. It was intended to see whether, taking part in risky sexual activities differ by gender in the population.

Let  $p_1$  = population proportion of females ever took part in risky sexual activities

$p_2$  = population proportion of males ever took part in risky sexual activities

Hence the following hypothesis also tested.

$H_0: p_1 = p_2$

$H_1: p_1 < p_2$

At  $\alpha = 5\%$ , the Fisher's exact test  $p$  – value of the hypothesis test is 0.152. Therefore, null hypothesis is not rejected. It can be concluded that the proportion of males taking part in risky sexual activities is not different from proportion of females.

### Comparison of Population Proportions of Taking part in Risky Sexual Activities by Type of School:

The population of the study consist both public and private schools, it was intended to test whether taking part in risky sexual activities is different in public schools and private schools.

Let  $p_1$  = Population proportion of public school adolescents ever took part in risky sexual activities.

$p_2$  = Population proportion of private school adolescents ever took part in risky sexual activities.

$H_0: p_1 = p_2$

$H_1: p_1 \neq p_2$

At  $\alpha = 5\%$ , the  $p$  – value of the hypothesis test is 0.274. Therefore, null hypothesis is not rejected. At  $\alpha = 5\%$  there is evidence to say that taking part in risky sexual activities is not different in public schools and private schools.

## V. DISCUSSION AND CONCLUSION

It is discussed that risky sexual behavior is one of the main unhealthy behaviours for adolescents. And they may experiment on these unhealthy behaviours, which in turn may affect their future. In this study, we examine risky sexual behavior by demographic and source of knowledge in Western Province of Sri Lanka. The results of the study revealed that 5% of adolescents in Western Province of Sri Lanka have taken part in risky sexual activities and around 25% of adolescents get their source of knowledge from the media. It was also found that the proportion of males and females who took part in risky sexual activities are equal. Furthermore, it was found that adolescents who take part in risky sexual activities are equal in public and private schools. Following the results of this study, steps to be taken in the prevention of adolescent's risky sexual behavior, should begin from the government on spreading awareness and educating adolescents and their parents on the dangers of risky sexual behaviour. Awareness of dangers of risky sexual behavior, such as teenage pregnancies, STD/STI infections, etc, can be spread by starting media campaigns. Both private and public schools should pay more attention and educate adolescents and their parents to prevent risky sexual behaviour. Other government and non-government organizations can implement workshops to the public and prevent risky sexual behaviors in adolescents. It is recommended to continue this study for other provinces in Sri Lanka. Further, it is useful to expand this study as district levels and examine the comparison between provinces and districts.

In conclusion, almost 50% of adolescents get their source of knowledge about sexuality from school and around 25% from media. It is found that risky sexual behaviour between male and female adolescents, and public and private schools are not different in Western province of Sri Lanka.

## REFERENCES

- [1] Bandura. "Social learning theory," General Learning Press, 1971.
- [2] A. Berkowitz. "An overview of the social norms approach. Changing the culture of college drinking: A socially situated prevention campaign," Chapter 13, 2005.
- [3] A. Raj, B. Rabi, P. Amudha, V. Edwin R, et al. "Factors associated with teenage pregnancy in South Asia: a systematic review," Health Science Journal, Vol. 4, No. 1, pp. 3-13, 2010.
- [4] B. Perera and M. Reece. "Sexual behavior of young adults in Sri Lanka: Implications for HIV prevention," Routledge. Vol.18, No. 5, pp. 497-50, 2006.



**International Journal of Novel Research in Physics Chemistry & Mathematics**

 Vol. 5, Issue 3, pp: (1-9), Month: September - December 2018, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [5] C. De Silva, E. Nora. "HIV/AIDS in Sri Lanka," The World Bank, 2007.
- [6] F. Amoateng, I. Kalule-Sabiti, J. Arkaah. "The effect of socio-demographic factors on risky-sexual behaviours of adolescents in the north west province of South Africa," African Population Studies, Vol. 28, No. 1, pp.487-499, 2014.
- [7] F. Dulithu, G. Nalika, S. Upul, et al. "Risk factors for teenage pregnancies in srilanka: perspective of a community based study," Health Science Journal. Vol. 7, No. 3, pp. 269-284, 2013.
- [8] F. Oluwatoyin and O. Modupe. "Risky sexual behaviour among secondary school adolescents in Ibadan North Local Government Area, Nigeria," Journal of Nursing and Health Science, Vol. 3, No. 3, pp.34-44, 2014.
- [9] I. Ajzen. "From intentions to action: a theory of planned behavior," J. Huhl, & J. Beckman (Eds.), Will; performance; control (psychology); motivation (psychology), p.11-39, 1985.
- [10] J. Klein, J. Brown, C. Dykers, et al. "Adolescents' risky behavior and mass media use," American Academy of Pediatrics, Vol. 92, No. 1, Jan. 1993.
- [11] M. Johnson, K. Myors, R Langdon. "Coping styles of pregnant adolescents," Public Health Nursing, 18: 24-32, 2001.
- [12] N. Thalagala, L. Rajapakse, and H. Yakandawala. "National survey on emerging issues among adolescents in Sri Lanka," UNICEF Sri Lanka, 2004.
- [13] O. Nwankwo and A. Nwoke. "Risky sexual behaviours among adolescents in Owerri Municipal: Predictors of Unmet family health need," African Journal of Reproductive Health, Vol. 13, No. 1, p.135-145. 2009.
- [14] P. Knapp and A. Beck. "Cognitive therapy: foundations, conceptual models, applications and research," 2008.
- [15] R. Jessor. "Problem Behavior Theory," Psychology Press, pp.239-256, 1958.
- [16] S. Gunaratne, and S. Hasim. "Social responsibility theory revisited," The public. Vol. 3, pp.97-107, 1996.
- [17] UNDP. "Population and HIV/AIDS 2005," New York: United Nations, Department of Economic and Social Affairs, Population Division, 2005.
- [18] "Young people and HIV/AIDS," World Health Organization, 2006.