

*Original Paper*

# Interaction Effect of Sex on Cognitive Behaviour Therapy and Logotherapy in Reducing Risky Sexual Behaviours among School Adolescents

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## **Abstract**

*This study investigated the interaction effect of sex on cognitive behaviour therapy and logotherapy on risky sexual behaviours among adolescents, in public secondary schools in Benin metropolis, Edo State, Nigeria. The study adopted a quasi-experimental design, using pre-test—post-test, non-equivalent control groups. The population of the study comprised of SS II students in the Thirty-one (31) mixed public senior secondary schools in Benin Metropolis. The sample of the study consisted of one hundred and thirty-five (135) Senior Secondary Two (SSII) students. The study adapted the “Adolescent Sex Behaviour Inventory” developed by Friedrich (2004). The instrument was validated while the reliability coefficient of 0.926 was established. The collected data were analysed, using descriptive and inferential statistics. The findings of the study revealed that there is significant difference in the treatment interaction by sex in reducing risky sexual behaviours among school adolescents. Therefore, it was concluded that sex could play a role in the reduction of risky sexual behaviours among school adolescents. Based on the findings, it was recommended that school counsellors should encourage parents to give sex education early and discuss sex-related issues that are appropriate for their children in all stages to avoid the consequences of risky sexual behaviours.*

## **Keywords**

*risky sexual behaviour, adolescence, sex, logotherapy, cognitive behaviour therapy*

## 1. Introduction

The adolescence stage can be viewed as a process of transformation, which takes place between childhood and adulthood, in which the emerging bodily change tends towards various social and emotional activities. It is a time of discovery of self and formation of relationships within and outside immediate environment. The desire to be socially independent with high ambition to live a meaningful life and to explore opportunities towards achieving the purpose of existence is a major characteristic of this stage of life. This desire sometimes lures many adolescents into perpetrating activities that are very risky and could be detrimental to their wellbeing.

Risk taking is a way of involving oneself in behaviours that are potentially harmful or dangerous but could provide the opportunity for some kind of outcomes with temporary pleasure and the momentary positive feelings (Saxena & Puri, 2015). Risk taking behaviours are the activities or behaviours that can have adverse effects on the overall development and wellbeing of a person. Such risky behaviours might prevent the individual(s) from reasonable and objective thinking, thus disrupting them from realizing the meaning and purpose of their life existence. Adolescents may respond to impulse rather than deep thinking and consider the temporary benefits they may enjoy rather than the unintended consequences of their actions.

Inappropriate thoughts could cause maladaptive behaviours, resulting in an individual engaging in unhealthy behaviours. These unhealthy behaviours could subject an individual to some disturbances in the psyche, possibly causing a loss of meaning and focus of their life goals. Such situation could affect the human mind; sometimes stricken with stress, depression, and other psychological troubles that may need an objective cure from a psychotherapist (Egbochuku, 2012). Moreover, since adolescents could experience the same problem that adult do, there is need to attend to them. Adolescents' needs include meaning out of life issues and experiences as well as an attempt to make meaning out of life. Risk taking becomes common place among adolescents as they are always anxious to know, find out and explore situation.

Young adolescents may be very concerned about their acceptability by their peers. If not controlled, this desire to belong can serve as negative influence on many of them to engage in risk behaviour that they would not normally engage in. Similarly, in the older adolescents, the intensity to involve with their peers can give way to more intimacy in friendship, romance and risky sexual behaviour. Adolescents between 10 to 19 years of age and young adults 20 to 24 years of age are more likely to have multiple (sequential or concurrent) sexual partners rather than a single, long-term relationship when compared to other groups (Nigerian Centre for Disease Control and Prevention, 2011). It was found that these two groups may be more likely to engage in unprotected intercourse and they may unknowingly select partners who have more risk characteristics, such as partners with Sexually Transmitted Infections (STIs).

Adolescents could be assisted to change these maladaptive behaviours in order to meet the challenges

of life, remove distorted thinking and assist them to achieve the purpose and meaning of existence. Numerous counselling therapies that can enhance adaptive behaviours and eliminate maladaptive ones such as unnecessary feelings, emotion, attitudes, neurosis and irrational thoughts or fundamental faulty thinking abound in the field of psychology. Among them are Cognitive Behaviour Therapy (CBT) and Logotherapy.

CBT is based on the premise that the way a person perceives events and situations may affect how feelings and emotions are expressed (Tanner, 2014). This therapy attempts to assist clients on how they can think (the cognitive) and how they can act (the behaviour). Aaron Beck was one of those who, in the 1960s expounded the Cognitive Therapy. His approach to this therapy lies within the group of Cognitive Behaviour Therapies (CBT). Cognitive therapy makes use of various techniques (processes); chief among them is Cognitive Restructuring (CR) which was adopted in this study.

The main objective of cognitive restructuring is to organize new and different ways by which negative thoughts could be turned to positive and beneficial thoughts. Cognitive restructuring is a psychotherapeutic learning process of recognizing and disputing the distorted thoughts that are maladaptive, such as taking emotional risks. Cognitive restructuring is a major technique in cognitive behavioural intervention, used to help persons to identify, challenge and alter thoughts that can induce stress and beliefs relating to their problems or challenges in order to produce and adopt more adaptive behaviours. It involves approaches such as Socratic questioning, Thought stopping, Visualization, Imagery and Reframing. These approaches address behavioural challenges such as risky sexual behaviours, with this study specifically relying on the reframing approach for CBT.

Furthermore, Victor Frankl's Logotherapy, developed in the 1930s, is another psychotherapeutic intervention. Logotherapy is a meaning-centred approach to psychotherapy; and it is compatible with Cognitive Behaviour Therapy (Ameli & Datilo, 2013). It involves integrated psychological techniques, employed in the process of helping people to find meaning to their lives. This therapy could assist clients with meaning crises, which may manifest either in a feeling of hopelessness and due to addiction, alcoholism, anxiety and obsessive-compulsive disorders (Kriegler, 2014). The therapy asserts that life is meaningful in self-denial and that the human being's main motivation is to evolve meaning to their lives. The therapy has three major principles, which are; freedom of will; will to meaning; and meaning in life.

Logotherapy (LT) techniques address attitudinal challenges such as risk-taking behaviours and behaviours that may distort a person's purpose and meaning to life. The techniques, according to Frankl (2000) are Socratic dialogue, paradoxical intention, de-reflection, modification of attitudes and family logotherapy. These techniques may not all be applied by a therapist at once in solving just one attitudinal problem of clients. Logotherapy addresses thoughts and actions/inactions that may distort a person's meaning and purpose of life existence. This study relied on the paradoxical intention and de-reflection for logotherapy; and reframing approach for Cognitive Behavioural Therapy (CBT).

Cognitive Behavioural Therapy and Logotherapy as interventions may be effective in reducing or eliminating risk-taking behaviours, in particular risky sexual behaviours among adolescents. However, the effectiveness of these interventions requires an in-depth investigation. Various works have been done on the effectiveness of Cognitive Behavioural Therapy and Logotherapy, among them are Schnell and Becker (2006), Hamideh, Amali, and Zakieh (2013). These studies addressed different behavioural distortions, but to the knowledge of the researcher, few or no studies are available that have combined the two interventions in addressing risky sexual behaviours, especially among the school adolescents, in Benin metropolis, especially the interaction effect of sex on the two therapies.

The rate at which adolescents of today engage in risky behaviours is alarming and worrisome, owing to their exposure to various pornographic outlets, from online media, the internet, and peer groups, among others. The effects of risky sexual behaviour are raising serious concerns and may include unwanted pregnancies among female students, abortion, which could lead to death or permanent deformity, sexually transmitted diseases and infections, disturbance in school attendance and subsequent withdrawal from school. These can truncate a child's life pursuit and derail his/her life purpose. In most cases, adolescents may not readily understand the consequences of their actions apart from the immediate pleasure they derive.

Risk-taking behaviour among adolescents in today's world involves unprecedented intercourse, unprotected sex, early sexual activities, multiple sex partners, high risk partners, rape, and prostitution. These seem to be prevalent among youths generally and adolescents of school going age in Nigeria in particular. A study by the National Population Commission (NPC) in 2009 in some parts of Nigeria revealed that sexual interactions of various dimensions among the youths and adolescents have been on the ascendancy. Authorities and agencies have decried the alarming rate of the increase in Sexually Transmitted Diseases (STD), which is attributable to prevalence of sexual activities and risky behaviours among adolescents. Despite continuous education and awareness programmes, the rate of increase in youths' and adolescents' involvement in unsafe sex and other related practices that could expose them to infections and other sexually related danger is growing (Nigeria Centre for Disease Control and Prevention, 2011; Omagie & Omagie, 2013). It is therefore, imperative to explore the efficacy of some psychotherapeutic interventions, such as CBT and LT in reducing this psychosocial problem and to investigate the interaction effect of sex on these interventions.

Therefore, the study sought answers to the following questions: can Cognitive Behaviour Therapy and Logotherapy effectively assist in guiding the school adolescents to take and make right decisions at the appropriate time regarding risky sexual behaviour? Can the school adolescents' sex have influence on the interaction of the therapies on risky sexual behaviour? It is in the light of this that this study sought to investigate whether CBT and Logotherapy interventions would be efficacious in reducing risky sexual behaviours among the school adolescents; and if there is an interaction effect of treatment by sex in the reduction of risky sexual behaviours among school adolescents in Benin metropolis, Nigeria.

To direct this study, the following research questions were raised;

- i. Is there a difference in risky sexual behaviour among school adolescents treated with Cognitive Behaviour Therapy, Logotherapy and the control group at post-test?
- ii. Is there an interaction effect of treatment by sex in the reduction of risky sexual behaviours among school adolescents in Benin metropolis?

The two research questions were hypothesized and tested at 0.05 alpha level of significance.

- i. There is no significant difference in risky sexual behaviours among school adolescents treated with Cognitive Behaviour Therapy, Logotherapy and the control group at post-test.
- ii. There is no significant interaction effect of treatment by sex on the reduction of risky sexual behaviours among school adolescents in Benin metropolis.

## **2. Method**

### *2.1 Design*

The study adopted a quasi-experimental design using the pretest-posttest, non-equivalent control group. In this design, intact classes were used because the design does not permit random assignment of subjects to the experimental and the control group. The treatment levels were Logotherapy, Cognitive Behavioural Therapy for the experimental groups; and a non-attention treatment for the control group. Sex, which is the intervening variable, is at two levels, male and female. There is one dependent variable, which is risky sexual behaviour.

### *2.2 Population*

The target population of this study is the SS II students in the thirty-one (31) mixed public senior secondary schools in Benin Metropolis, Edo State, Nigeria. This group of students is considered appropriate for this study, because it is believed that students of this class are mainly adolescents who could be more vulnerable to risky sexual behaviours. Furthermore, this population is chosen because senior school students largely share similar sexual behavioural characteristics.

### *2.3 Sample and Sampling Procedure*

The sample for this study consisted of one hundred and thirty-five (135) participants drawn from the intact classes. Only the Senior Secondary Two (SSII) students were involved in the study. Those that scored above 105 out of the total score of 168, were considered prone to risky sexual behaviours and therefore served as the participants for the study. This was obtained from the product of the aggregation of scores of items on the instrument and the average of the total responses on the same instrument.

### *2.4 Instrumentation*

The study adapted the “Adolescent Sex Behaviour Inventory (ASBI)” developed by Friedrich (2004). Various researchers, such as, Wherry, Berres, Sim, and Friedrich (2009), have successfully used the instrument. It measured risky sexual behaviours, non-conforming sexual behaviours, sexual interest and sexual discomfort in adolescents.

The instrument was administered to collect data at the pre-test to find out the initial equivalence of the groups to determine if there was a difference between the pre-test risky sexual behaviour and post-test risky sexual behaviours after treatment. This was followed by the treatment. The researcher was assisted by trained research assistants to concurrently treat the three groups in their separate schools, to avoid participants' interaction.

### 2.5 Method of Analysis

At the end of the treatment, the experimental and the control groups were post-tested, using the same ASBI. Inferential statistics, such as t-test and Analysis of Variance (ANOVA) were used to test the hypotheses.

## 3. Results

**Hypothesis 1:** There is no significant difference in risky sexual behaviour among school adolescents treated with Cognitive Behaviour Therapy, Logotherapy and the control group at post-test.

**Table 1. Descriptive Statistics of CBT and LT Group on Reduction of Risky Sexual Behaviour at Pre-test**

Experimental		Pretest	
Group	N	Mean	Std. Deviation
Cognitive Behavioural Therapy	55	67.87	16.81
Logotherapy	36	67.13	16.61
Control	44	68.00	11.38
Total	135	67.71	15.09

Table 1 shows the mean and standard deviation of the pre-test for the three groups. For the Cognitive Behaviour Therapy group (N= 55, mean= 67.8727, Standard deviation= 16.81386); the logotherapy (N= 36, mean= 67.1389, Standard deviation= 16.61351) and the control group (N= 44, mean= 68.0000, Standard deviation =11.38951). To test if there is a significant difference in the pre-test among the three groups, the one-way ANOVA statistic was used.

**Table 2. Descriptive Statistics of CBT and LT on Reduction of Risky Sexual Behaviour at Post-test**

Group	N	Post test	Std. Deviation
Cognitive Behaviour Therapy	55	64.09	16.64
Logotherapy	36	62.00	16.33
Control	44	75.05	19.72
Total	135	67.10	18.37

Table 2 shows the mean and standard deviation at the post-test for the three groups. For the Cognitive Behaviour Therapy group (N= 55, mean= 64.09, Standard Deviation= 16.64); the logotherapy (N= 36, Mean= 62.00, Standard Deviation= 16.33) and the control group (N= 44, Mean= 75.05, Standard Deviation= 19.72). To test if there is a significant difference in the pre-test among the three groups, the one-way ANOVA statistic was used.

**Table 3. One-way ANOVA of Reduction on Risky Sexual Behaviour at Post-test between the Groups**

Group	Sum of Squares	Df	MS	F	Sig.
Between Groups	4212.09	2	2106.05	6.777	.002
Within Groups	41020.46	132	310.76		
Total	45232.55	134			

Table 3 shows an F-value of 6.777 and p-value of 0.002. Testing at the alpha level of 0.05, the p-value (0.002) is less than the alpha level 0.05. Therefore, the null hypothesis, which states that “There is no significant difference in risky sexual behaviour for in-school adolescents treated with Cognitive Behaviour Therapy, Logotherapy and the control group at post-test” is rejected. Consequently, there is a significant difference in risky sexual behaviour between the treatment groups (cognitive behaviour therapy and logotherapy) and the control group.

**Hypothesis 2:** There is no significant interaction effect of treatment by sex on risky sexual behaviour among school adolescents in Benin metropolis.

**Table 4. T-test of Risky Sexual Behaviour at Posttest for Sex**

	Sex	Mean	Standard deviation	T	Sig.
Pre-test Risky Sexual Behaviour	Male	71.5690	16.33435	2.629	.136
	Female	64.8182	13.47779		

Table 4 shows the mean and standard deviation of risky sexual behaviour at posttest by Sex. Male (Mean= 71.57, STD= 16.35); Female (Mean= 64.09, Standard deviation= 13.48). The t-value and p-value are 2.63 and .136 respectively. The alpha level (0.05) is less than the p-value of .136. Table 12 also shows significant difference among the groups at pretest, hence no need for pretest as covariate.

**Table 5. Descriptive Statistics of Sex of Participants on Reduction of Risky Sexual Behaviour**

Group	Sex	N	Mean	Std. Deviation
Cognitive Behavioural Therapy	Male	28	65.39	15.90
	Female	27	62.74	17.58
	Total	55	64.09	16.64
Logotherapy	Male	5	53.00	17.52
	Female	31	63.45	15.96
	Total	36	62.00	16.34
Control	Male	25	82.00	17.28
	Female	19	65.89	19.37
	Total	44	75.05	19.72
Total	Male	58	71.48	19.07
	Female	77	63.81	17.22
	Total	135	67.10	18.37

Table 5 shows cognitive behaviour therapy group, the number of male and female respondents, mean and standard deviation are as follows male (mean=65.39, standard deviation= 15.90, N= 26); female (mean= 62.74, standard deviation= 17.58, N= 27). For the Logotherapy group, the number of male and female respondents, means and standard deviation are as follows; male (mean= 53.00, standard deviation= 17.52); female (mean= 63.45, std deviation= 15.96, N= 31). In the control group, the number of respondents, mean and standard deviation are as follows: male (Mean= 71.48, Standard deviation= 19.07, N= 58, female (Mean= 63.81, Standard deviation= 17.22, N= 77).

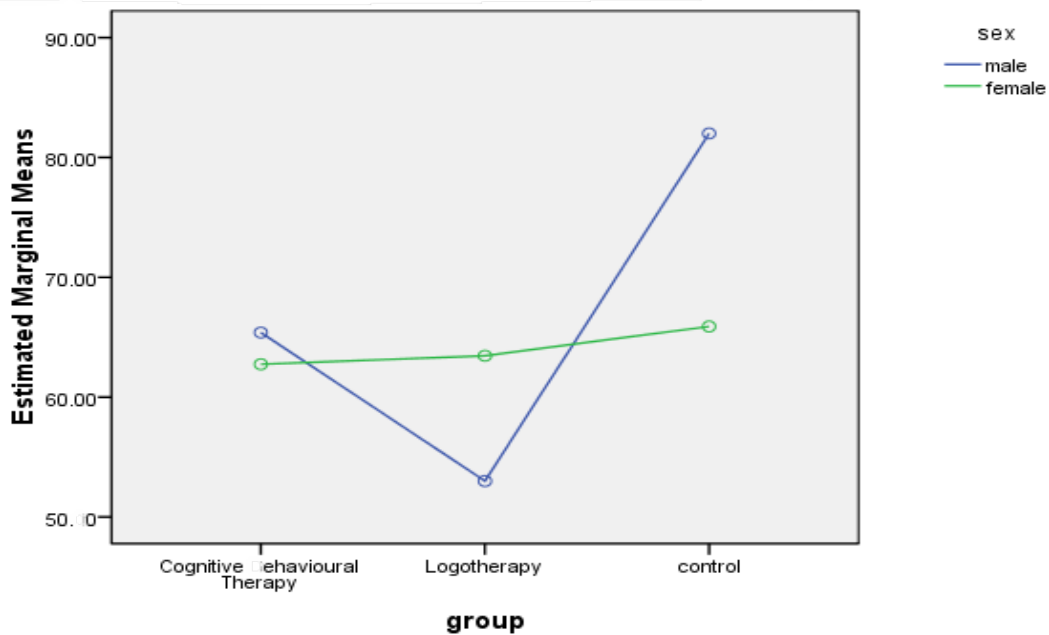


**Table 6. One-way Analysis of Variance of Sex Interaction Effect of CBT and LT on Risky Sexual Behaviour**

Source	Type III Sum		MS	F	Sig.
	of Squares	Df			
Corrected Model	7579.217a	5	1515.843	5.193	.000
Intercept	387385.914	1	387385.914	1.3273	.000
Group	3881.805	2	1940.902	6.650	.002
Sex	173.488	1	173.488	.594	.442
group * sex	2419.691	2	1209.845	4.145	.018
Error	37653.331	129	291.886		
Total	653125.000	135			
Corrected Total	45232.548	134			

a. R Squared= .168 (Adjusted R Squared= .135)

From Table 6, the sex interaction effect has a Mean Square of 1209.845, F-value of 4.15 and a p-value of .018. Testing at the alpha level of 0.05, the p-value is less than the alpha level (0.05). Therefore, the null hypothesis, which says 'there is no significant interaction effect of treatment by sex on risky sexual behaviour among school adolescent' in Benin metropolis is rejected. Hence, it was concluded that there is a significant difference in the treatment interaction by sex on risky sexual behaviour among the in-school adolescents in Benin metropolis.



**Figure 1. Estimated Marginal Means of Post-test by Sex**

Figure 1 shows the estimated marginal mean of risky sexual behaviour for the male school adolescents exposed to CBT as 65.39 and female adolescents as 62.74. Therefore, CBT is more effective for female school adolescents than the male counterparts. In addition, the table shows a marginal mean of risky sexual behaviour for male and female school adolescents exposed to Logotherapy as 53.00 and 63.45 respectively. This indicates that Logotherapy is more effective for male school adolescents than female school adolescents.

#### **4. Discussion**

The testing of hypothesis one at alpha level of 0.05 as contained in Table 3 showed that there is a significant difference between the treatment groups and the control group in risky sexual behaviours with the F-value of 6.78 and P-value of 0.002. By implication, the impact of the treatment therapies on the treatment groups could have brought about the difference between them and the control groups without treatment. No wonder the mean scores of the treatment groups reduced at the posttest, while that of the control group increased as contained in Table 2. One can therefore conclude that the therapies were effective. This corroborates the findings of Hamideh, Samaliand and Zakieh (2013), where they concluded that when an unhealthy behaviour in an individual is left unattended to in due course, such could lead to a serious lifetime disorder, which could impede the sufferers achieving his or

her life purpose.

Addressing hypothesis 2, Table 6 showed that the sex interaction effect has a mean square of 1209.845, F-value of 4.145 and a p-value of .018. Testing at the alpha level of 0.05, the p-value is less than the alpha level (0.05). Therefore, the null hypothesis which states that ‘there is no significant interaction effect of treatment by sex on risky sexual behaviour among in-school adolescents in Benin metropolis’ is rejected. Hence, it was concluded that there is significant difference in the treatment interaction by sex on risky sexual behaviour among school adolescents in Benin metropolis. This means that the therapies are gender biased. In other words, male and female subjects could have responded differently to the treatment. This is not in line with the finding of Womiloju and Ayodele (2016) who found that sex of participants did not influence how they benefited from the treatment of cognitive behavioural therapy.

Furthermore, Figure 1 showed the estimated marginal mean of male in-school adolescents exposed to CBT as 65.39 and female in-school adolescents as 62.74. Therefore, CBT could be said to be more effective for female school adolescents. This may be because CBT could have helped the female school adolescents deal with their upsetting thoughts objectively; and helped them to re-evaluate their thoughts rather than accepting them automatically than their male counterparts. This finding supports Ugwu and Olatunbosun (2016), who established that CBT had significant efficacy on reducing bullying. Falaye and Okoije (2012) also revealed that cognitive restructuring techniques could be effective in reducing truancy among secondary school adolescents. This can be justified by the fact that cognitive behaviour therapy aims at redirecting individuals with maladaptive ways of thinking and behaviours to better way of thinking and behaving.

In addition, the analysis showed a marginal mean of male and female in-school adolescents exposed to Logotherapy as 53.00 and 63.45. This indicates that Logotherapy is more effective for male school adolescents than females. This may be because male school adolescents could have found life more burdensome and devoid of meaning. This finding supported Afkham, Tabrizi and Shafiabadi (2008) who investigated the effect of logotherapy treatment on the promotion of women’s health and found that logo-therapeutic treatment could reduce anxiety and depression among the participants. Logotherapy assisted participants to overcome life’s pain, suffering, thereby encouraging them to discover their uniqueness. The study of Kleftras and Psarra (2013), which found that “the use of techniques and strategies of logotherapy could improve the quality of life for patients with MS”, is in line with the finding of this study.

Based on the findings of this study, it was concluded that there was difference in the treatment interaction by sex in reducing risky sexual behaviours among school adolescents in Benin metropolis. CBT is more effective for male adolescents, while logotherapy is more effective for female adolescents. The following were recommended for appropriate actions.

- Counselling psychologists and school counsellors should familiarize themselves with the CBT and LT principles and procedures as well as their treatment packages in assisting the school adolescents overcome risky sexual behaviour challenges and other maladjusted behaviours.
- Parents should aid the well-being of their adolescent children by guiding and monitoring their children sexual attitudes, especially the peers they associate with.
- Parents should share values with their adolescent children, such as being a good role model, teach them on how they can live a healthy life and avoid risky behaviours.

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