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Evidence Based Therapeutic Outcome of Multimodal Therapy on Sexual Decisions of Students in River State Remedial Study Centres

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Abstract

Previous efforts at remediating sexual decision of adolescents in Nigeria have been based on unimodal therapies. Therefore, this study investigated the effectiveness of Multimodal Therapy (MMT) on sexual decisions of adolescents studying in Remedial Centres in Rivers state, Nigeria. Pre-test post control group quasi experimental design with 2x 2 factorial matrix was adopted to execute the study. One hundred and twenty-eight students consisting 71 males (55.4%) and 57 females (44.5%) with age range of 16-21 years ($\bar{x}$ =13.2; SD=3.2) participated in the study. Simple random sampling technique was utilized to draw samples from Remedial Study Centers in River state. Adolescent Decision-Making Questionnaire (r=0.77) was the outcome measure. The experimental group was exposed to nine sessions of MMT (18 hrs) while the control group served as a comparison group. Analysis of Covariance and Multiple

classification analysis were used to test the three hypotheses. There was significant main effect of treatment ($F_{(2,123)}$ =10.871; P<0.05). Male participants had superior treatment gains when compared with the female. These results suggest that Multimodal therapy can be useful in enhancing sexual decision, however programmers should be gender sensitive when designing treatment package.

Key Words: Multimodal Therapy, Adolescents, Sexual Decisions, Remedial study Centres, River State

Introduction

Data on sexual and reproductive health (SRH) outcomes in Nigeria show that on the average young people make wrong sexual decisions. Sexual decision in this study is conceptualised as preferences and resolutions made by an individual regarding the timing of sexual intercourse, contraceptive use and conditions under which sexual relationship occur. The decline in the age of sexual initiation, multiple partnerships, low patronage of reproductive health facilities and non-usage of contraceptives reported by several studies are evidences of wrong sexual decisions among Nigerian adolescents. An instance is the progressive decrease in the age of sexual initiation among young Nigerians between ages 10- 19 years when compared with their counterparts over the last two decades (National Demographic Health Survey, 2012; Isiugo-Abanihe, *et al*, 2012). Imaledo, Peter-Kio and Asuquo (2012) documented that less than half of undergraduates in Rivers State universities reported to have sexual debut between 5 and 24 years. Similarly, high rate of unprotected sexual intercourse, multiplicity of sexual partners and widespread casual sexual activities have been reported by adolescents in Nigeria (Nigeria National Demographic Health Survey, 2012). The same trend was also observed in young people globally. For instance, results from the 2013 National Youth Risk Behaviour Survey (YRBS) indicates that many high school students aged 10–24 years in the United States are engaged in health-risk behaviours. Wrong sexual decisions contribute to unplanned pregnancy, maternal mortality and death due to pregnancy-related complications as well as increase in the incidence of sexually transmitted infections (STIs) including HIV/AIDS (USAID, 2009; Federal Ministry of Health, 2012; Centre for Disease Control, 2013; World Health Organization, 2015).

The ability of adolescents to safely navigate from childhood to adulthood is diversified by factors such as sex, age, marital status, residence, living arrangements, migration, educational and socio-economic status. Researchers (Okonta, 2007; Imaledo, *et al*, 2012; Balafama, *et al*, 2012; Ofole and Agokei, 2014; Ofole, 2015) show that due to geographic, economic and socio-cultural peculiarity of Niger Delta region, adolescents in states River state are more susceptible to unhealthy sexual

decisions. This probably culminated to the high incidents of HIV/AIDS recorded in River sate. Result of 2012 HIV survey show that Rivers State is leading other states of the country with a prevalence rate of 15.2 per cent. The high incidence has been attributed to concurrent sexual partnerships, intersection of widespread poverty, migration, and sex work (Okonko and Nnodim**,** 2015). These factors are believed to increase vulnerability to HIV/AIDS and other sexually transmitted diseases (STIs) in this region, particularly among women and youth (Omorodion, 2006). Regrettably this group is rarely targeted in interventions and researches.

Good sexual health implies not only the absence of disease, but the ability of adolescents to understand and weigh the risks, responsibilities, outcomes, and impacts of sexual actions, to be knowledgeable of and comfortable with one's body, and to be free from exploitation and coercion. Making decisions involve choosing a course of action among a fixed set of alternatives with a specific goal in mind. Decisions made at every point in time plays a vital role in the growth and success of every individual but embarking on romantic and sexual relationships is a normative part of adolescent development as they transit to adult roles (Coley, *et al*, 2009). Halpern-Felsher and his colleagues (2001) opine that an important task during adolescence is learning to make decisions, experiencing the related positive and negative consequences, and learning from these outcomes (Millstein, *et al*, 2001). This line of thought is in tandem with Havighurst (1972) developmental task which involves adolescent making decisions based on acquired set of values and an ethical system. Regrettably, study suggest that while adults use rational decision making processes when facing emotional decisions, adolescent brains are simply not yet equipped to think through things in the same way. Their actions are guided more by the amygdala and less by the frontal cortex (Giedd, *et al*, 1999).

Irrespective of circumstances of birth, every adolescent require age-appropriate, comprehensive sexuality education to enable him/her make informed decision. Adolescents who are not yet sexually active also need support and skills to postpone initiation; those who are already sexually active need to be encouraged to access protective measures to prevent unwanted pregnancy, STIs including HIV/AIDS. Unlike their counterpart in the developed countries who are believed to have better information about sexuality, adolescents in Nigeria are caught between tradition and changing cultures brought about by urbanization, globalised economies and a media-saturated environment. Studies suggest that parents in Nigeria have not been playing their roles adequately in shaping the choices young people make about sex partly because sex is traditionally a very private subject in Nigeria and the discussion of sex with teenagers is often seen as inappropriate**.** In addition to this is the view that some parents who are supposed to equip their children with reproductive health information

and protective skills against risky sexual behaviours may not possess adequate skills and competencies to do so (Durojaye,2008; Uwakwe, Amusan-Ikpa, Ofole, *et al*, 2014).

It is well documented that possessing life skills may be critical to young people's ability to positively adapt to and deal with the demands and challenges of life (Rotermann, 2012; Benotsch, *et al*, 2013). Over several decades, a range of approaches have been implemented to improve sexual decisions of adolescents, however each of them have varying degrees of effectiveness. For example, there is a good evidence for mass-media interventions on issues relating to adolescents although it is unclear whether mass-media programmes are effective since the relative contribution of individual components of the programmes have not been investigated (Davis, Gilpin & Loken,2008; National Institute for Health and Clinical Excellence Mass-media, 2008). There is also evidence of Family Life and HIV Education (LFHE) where lessons are part of the Nigerian school curriculum. A study by Sedgh, Bankole, Okonofua, Imarhiagbe, Hussain and Wulf (2009) evaluated the successes and failures of the curriculum and reveals that though it improved knowledge of sexuality, however, there are not enough teachers for the number of students in schools. In addition, it is well documented that curriculum-based interventions appear insufficient in promoting skills required for a healthy sexual decision.

Due to these identified gaps, it becomes expedient to investigate the effectiveness of Multimodal Therapy (MMT) on improving healthy sexual decisions of adolescents in remedial study centres in River state, Nigeria. This is in line with new thinking among programme designers that enhancing responsible sexual decision requires more intensive and individualized services that will require comprehensive assessments of the problem, as well as flexible, comprehensive and sustained interventions (Walker, Horner, Sugai, Bullis, Sprague, Bricker & Kaufman, 1996). Multimodal therapy is a broad-spectrum approach (involving a combination of individual, family, school and community elements) that is based on the assumption that clients' needs are often better served if therapists work in multimodal rather than unimodal or bimodal fashion's (Ojo,2010). MMT has the capacity to make the students take appropriate decisions and adopt lifelong attitudes and behaviours that support their health and well-being—including behaviours that reduce their risk for HIV, other STIs, and unintended pregnancy. Multimodal therapy (MMT) is an approach to psychotherapy devised by psychologist Arnold Lazarus. MMT is based on the principles and procedures of social and cognitive learning theories. Social learning theory states that all behaviours (normal and abnormal) are created, maintained, and modified through environmental events. MMT is anchored on the idea that humans are biological beings that think, feel, act, sense, imagine, interact—and that psychological

treatment should address each of these modalities. MMT treatment follows seven reciprocally influential dimensions of personality (or modalities) known by their acronym *BASIC I.D.*: behaviour, affect, sensation, imagery, cognition, interpersonal relationships, and drugs/biology. The data on whether MMT is more effective than narrow or targeted treatments for promoting preventive and protective sexual behaviours have been mixed. For example, studies reported significant effect of MMT on increasing contraception use and reducing pregnancy rates among girls. It is also documented that MMT successfully reduced smoking, drinking and risky sexual behaviour in comparison with a single therapy (Umeh, 2009; Altmeppen, Neumeier, Loew, Angerer & Lahmann, 2012).

Research has demonstrated that men and women differ considerably on a wide variety of variables including treatment outcome. The moderating effect of gender on treatment outcome was also examined in this study. Gender differences in decision making are well known, however, it still remains unclear whether men and women vary in response to multimodal treatment. Pieh, *et al*, (2012) using 496 patients show gender differences in CBT-orientated multimodal. This finding corroborates Ogrodniczuk and Staats (2002) earlier finding from a randomized trial of the interaction effects of gender on supportive and interpretive short-term individual psychotherapy using 88 females and 56 male patients. Results show that when gender is compared in therapy potency, the success of the therapy differs between men and women.

Purpose of Study

This study majorly investigated the main and interaction effect of Multimodal Therapy and gender in enhancing sexual decisions of cohorts of students in remedial Study Centres located in River state, Nigeria.

Hypotheses

The following three null were tested at 0.05 level of significance

1. There is no significant main effect of treatment on sexual decision of students in River State Remedial Study Centres

2. There is no significant main effect of gender on sexual decisions of students in River State Remedial Study Centres

3. There will be no significant composite effect of treatment and gender on sexual decisions of students in River State Remedial Study Centres

Methodology

Study Setting: The study setting was two LGAs (Obiokpor and Port Harcourt City LGAs) located in River State, Nigeria. Rivers State, also known as Rivers, is one of the 36 states of Nigeria. The state is located in the South-South Geo-Political Zone of the country. Its capital town is Port-Harcourt. According to census data released in 2006, the state has a population of 5,185,400, making it the sixth-most populous state in the country (National Population Commission, 2006). Its capital, Port Harcourt is the largest city and is economically significant as the centre of Nigeria's oil industry. River state was purposively selected for the study out of Nigeria 36 states and FCT due to its present position as the state with the highest 15.2% prevalence rate in Nigeria (Federal Ministry of Health, 2013).

Remedial Study Centres are established solely for the purposes of assisting students achieve expected competencies in core academic skills such as literacy and numeracy. This group was targeted due to the likelihood of anti-intellectual behaviours such as risky sexual behaviours linked to underachievement and academic failure which culminated to their being admitted into the remedial study centres.

Design: This study is pre-test post control group experimental design with 2x2 factorial matrix. The rows consist the treatment groups (Multimodal therapy and Control Groups) while the columns were made up of the gender at two levels (male vs. female). The four treatment conditions were; (1) male treated with Multimodal therapy (2) female treated with Multimodal therapy (3) male in the control group (4) and female in the control group.

Sample and Sampling Technique: A sample size of one hundred and twenty-eight students consisting 71 males (55.4%) and 57 females (44.5%) with age range of 16-21 years ($\bar{x}$ =13.2; SD=3.2) participated in the study. Simple random sampling technique was used in three stages to draw the primary group (Obiokpor and Port Harcourt City LGAs) out of 23 that presently made up River state. In the secondary stage, two remedial study centres were drawn out of the 5 that is situated in the two LGAs using simple sampling technique. Thereafter, a total of 154 students were randomly selected from the list of the registered students through simple ballot, out of which 130 gave consent to participate in the study, though two respondents eventually backed out of the study due to unknown reason (s).

Measures: Adolescent Decision-Making Questionnaire (ADMQ) developed and validated by Brown, John and Mann (1990) was adapted to measure the respondents' sexual decision-making behaviours. The ADMQ assesses the concept related to *coping: a) vigilance, b) complacency, c) panic, and d) cop out*. The final concept of cop out is subdivided into three categories: a) defensive avoidance, b) put it

off, and c) pass it on. ADMQ is a 30-item self-report questionnaire anchored on a 4-point Likert scale. Response choices include: a) not at all true for me, b) sometimes true, c) often true, and d) almost always true. Higher scores related to vigilance indicate confidence and better decision-making behaviours; while scores related to complacency, panic, and cop out reflect poor decision-making behaviours and are termed maladaptive coping behaviours. Based on the author's evaluation, the ADMQ have face validity and is appropriate for measuring adolescent decision-making. In addition, the language used in structuring the questionnaire was simple and appropriate for Nigerian adolescents. Regarding internal consistency, Cronbach's alpha reported for various components of the ADMQ are as follows: a) decision-making self-esteem (0.76), b) vigilance (0.70), panic (0.70), complacency (0.67) and copout (0.80) (Mann, Harmoni, Power, Beswick & Ormond (1988). Most studies using ADMQ report Cronbach's alpha values ranging from 0.52 to 0.81(Friedman & Mann, 1993; Radford, Mann, Ohta, & Nakane, 1993; Commendador; 2007). The instrument was revalidated for the purpose of the study and the reliability index obtained using test-retest was r=0.70.

Procedures: A formal letter of approval was granted by the two Proprietors of the Remedial Study Centres. In addition, the students were adequately-informed about the purpose of the study, and they freely-gave their consent prior to the commencement of the intervention. They were given the opportunity to opt out at any point during any stage that they were not satisfied with the conduct. Personally-sensitive information about the identity of the respondents was not included. Thereafter, respondents who met the inclusion criteria were randomly assigned into MMT and control groups. The treatment package was nine sessions and it holds for two days in a week (Wednesdays and Saturdays).). Each session had specific measurable objectives and it lasted for 2hours (2 hrs x 9weeks). It spanned a period of seven months (February-April, 2015). While the control group was seen only on three sessions (baseline data collection, post intervention and compensation therapy). The training module adapted the MMT eclectic principle. The researcher who is a trained Counselling Psychologist facilitated the sessions. She was supported by two post graduate students of the University of Ibadan who were resident in River state. The treatment package is an elongation of the four treatment steps suggested by Lazarus (1997).

Ethical Clearance: This study was planned and conducted in accordance with the ethical laws pertaining to researches and practices in the counselling professions. In addition to obtaining the approval of the school Proprietors after showing them the treatment protocols, written consent was taken from the participants before enrolment into the study. The participants were assigned identification numbers and were assured

that all information obtained would be treated with utmost confidentiality and used solely for the purpose of this research.

Summary of Treatment Sessions

The First Session: In this opening session the researcher and the assistants acquainted themselves with the participants. The principle of confidentiality was reaffirmed. She thereafter sought for mutual respect and cooperation and emphasized the need to respect one another's views. The baseline data was then collected using ADMQ. The overviews of the training as well as benefits of participating were discussed. Questions raised were answered while some myths and misconceptions regarding the therapy were clarified. The session was concluded by asking the participants to write down their expectations for the training and to bring it in the next session as a take home assignment.

The second Session: In this session the researcher assessed the problems inhibiting the adoption of responsible sexual behaviours using the seven modalities (BASIC ID)**.** The participants' self-defeating actions, maladaptive behaviours, attitudes, values, beliefs, opinions, emotions and imageries were probed by asking the following questions; "What have you been doing that is getting in the way of your happiness or personal fulfilment?" Their affect was assessed by asking them: "What emotions (affective reactions) are predominant in your life?" "Are we dealing with anger, anxiety, depression, or combinations and if so, to what extent (e.g., irritation versus rage; sadness versus profound melancholy)?" The participants interpersonal functioning was also assessed to discover significant others in their life and what they want, desire, expect and receive from them as well as what they will give in turn,

Third session: Bridging and tracking which are multimodal techniques were utilized to pin down three major areas of therapy. Therapy was also tailored according to the firing order presented by the treatment group i.e. S-I-C-B (Sensation, Imagery, Cognition, and Behaviour); C-I-S-B; I-C-S-B sequence. As a take home assignment the group was asked to write down how they would respond if a friend is forcing them to have a sexual relationship

The fourth session: There was group work on the benefits of adopting responsible sexual decisions and consequences of wrong choice. The Facilitator explained that sexual decision is a resolutions made by an individual regarding the timing of intercourse, contraceptive use, and conditions under which sexual relations should occur. She shared the participants into two groups. Group A discussed the benefits of responsible sexual decisions while group B discussed the consequences of wrong sexual decisions. Their efforts were commended and feedback on performance provided. The researcher concluded the session by adding that responsible sexual

decisions implies not only the absence of disease, but the ability to understand and weigh the risks, responsibilities, outcomes, and impacts of sexual actions, to be knowledgeable of and comfortable with one's body, and to be free from exploitation and coercion. This session was concluded by asking the participants to write down ten reasons why they should delay sexual initiation.

Session Five: The therapist utilized this session to change maladaptive thinking which culminates to change in affect and behaviour of the participants to a more rational, result oriented and realistic ones. Five basic steps were adopted in the session namely step 1: Identification of the irrational thoughts, beliefs, attitude and behaviours; Step 2: classification of the behaviour based on whether it is excesses or deficits; Step 3: Evaluation of the frequency, duration, or intensity; Step 4: If excess, attempt were made to decrease frequency, duration, or intensity of behaviours; if deficits, activities to increase behaviours were created.

Session Six: Participants' were exposed to assertiveness training. Assertiveness skill Training is a form of behaviour therapy executed to teach the participants appropriate strategies for identifying and acting on their desires, needs, and opinions while remaining respectful of others. Assertiveness skill will enable them to communicate in a clear and honest fashion which usually improves relationships within one's life. In addition to emotional and psychological benefits, assertiveness skill will have positive outcomes in many of their personal choices related to health, including being assertive in risky sexual situations; abstaining from using drugs or alcohol; and assuming responsibility for sexual decisions. The participants displayed role-plays designed to help them internalize the new skill. The researcher provided feedback to improve the response, and the role-play was repeated. The researcher encouraged the use of "I" statements as a way to help individuals express their feelings and reactions to others.

Session Seven: The facilitator utilized this session to teach the participants negotiation skills because conversations about sex often involve negotiation – a way to compromise without using anger, guilt, or intimidation. People in relationships may have to negotiate to set limits on sexual behaviours, decide what preventive methods they will use, and figure out how to protect themselves from STIs. Participants' were randomly picked to demonstrate scenarios that require negotiations. Feedback was provided with respect to what was demonstrated.

Session Eight: In this session the participants were taught refusal skills as a way to give equip them with the ability to say NO to unwanted sexual advances or risky situations. Emphasis was placed on the four essential components of an effective NO namely: 1. Say No emphatically 2. Say No and give excuses for your choice 3. Say No

and Leave the scene 4. Report to significant others. The researcher used a video that demonstrated the refusal skill. Thereafter, students were asked to describe how the skill was used and what made it effective. The participants were asked to keep a record for several days of when they said no to different situations in their lives.

Session Nine: In this concluding session, all previous sessions were reviewed to identify the extent to which the participants internalized the strategies. They were asked to comments about the program and the extent to which it benefited them. The researchers sought for evaluation of the content, the facilitator, the process, the duration, venue, entertainment and suggestion of possible areas of improvement. They were encouraged to maintain therapy gain outside the context of setting. Participants' final questions were answered. The researcher provided them feedback regarding their performances. They were all appreciated for their commitment and active participation throughout all the sessions. The final entertainment which served as "graduation'" was conducted and a group photograph was taken with their approval. The Adolescents Decision making questionnaire was re-administered to obtain post intervention data, therapy was thereafter terminated as earlier agreed by the therapist and the group.

Data Analyses

The demographic characteristics of the respondents were calculated using descriptive statistics. while Analysis of Covariance (ANCOVA) was used to test for the main and interaction effect of treatments and gender using pre-test scores as covariates and the post test scores as criterion measures. The ANCOVA was considered to be the most appropriate statistical tool for this study because it has capacity to control statistically the effects of other continuous variables which may likely co-vary with the dependent (sexual decisions) not accounted for in this study but has the capacity to contaminate the study outcome. Multiple Classification Analysis (MCA) was also adopted in the study to examine the interrelationship between the predictor variables (treatment and gender) and the dependent variable (sexual decision). The use of MCA also provided insight into the relative contributions of the predictor variable on the criterion variable.

Results

Hypothesis one: The results of the first hypothesis which stated that there will be no significant main effect of treatment on sexual behaviours of students in remedial programs in River state is presented on table 1. (Insert table 1 here).

The ANCOVA result as presented on table 1 show that the participants posttest scores on sexual decision using their pre-test as covariates indicate a significant main effect of treatment ($F_{(2,123)}$= .460; P<0.05). Since the calculated value is greater than the table value the null hypotheses was therefore rejected. The implication of this

finding is that Multimodal therapy was effective in enhancing responsible sexual decision of the participants in the experimental condition unlike their counterpart in the control group.

Hypothesis Two

Table I also indicate that the two-way interaction of treatment with gender was significant ($F_{(1,123)} = .342$; $P<0.05$). This implies that multimodal therapy was effective in fostering responsible sexual decision and however participants gained differently based on their gender. Result also show that the participants exposed to treatment had improved performance in sexual decision when compared with their counterpart in the control group. This is evident in the adjusted post-test mean score of (.65) which is higher than that of the control group (.55). In addition, gender differences in treatment gains. This is evidence to suggest that the male participants' had superior treatment gain since their mean score of 62.21 was significantly higher than 56.91 obtained by their female participants.

Hypotheses Three

Hypothesis which states that there will be no significant composite effect of treatment and gender on sexual behaviours of students in River State Remedial Study Centres was rejected. The MCA shown on table 3 indicates that Multiple $R^2 = .546$ while the multiple R is. 877. This implies that the treatments jointly accounted for 54.6 % of the variance in the criterion variable (sexual decision) whiles the remaining 43.4% could be attributed to other unexpected variables not accounted for in the present study (insert table 2 here).

Discussion

The outcome of this study shows a statistical significant differences in performance between the experimental and control groups in favour of the experimental group. The plausible explanations for the effectiveness of the treatment could be attributed to several reasons; first the diverse techniques employed by the researcher to assess the participants' behaviour, affect, sensation, imagery, cognition, interpersonal relationships (BASIC-I) which are significant factors in human behaviours unlike previous therapies which merely focused on the tripartite (behaviour, affect, and cognition). Second, in addition to the comprehensive assessment the treatment package was flexible, broad based, eclectic and entirely based on the participants identified problems, needs, and characteristics. The intervention therefore, professionally blended social and cognitive learning theory (imagery and fantasy, client-centred reflection, problem solving, assertiveness and communication skills) to produce synergistic therapeutic effects. The statement of some participants in the

experimental group reflected evidence of treatment gain -: (Sex is worth waiting for-----no need to rush-) (... sex and love are not the same----the difference is clear---), (I can decline a sexual relationship without losing my friends), (If I must have sex –then you must use condom—otherwise –no show). The outcome of this study agrees with the theoretical position of Ojo (2010) who opine that the eclectic approach of MMT is a veritable mode for solving multifaceted problems of clients. The study outcome is similar to that reported by Umeh (2009) who found that MMT was effective after three months of treatment in the reduction of homosexual sexual attraction for similar sex, reduced frequency of masturbation, lowered marital distress and improved psychological well. However, unlike the present study that studied a cohort of students Umeh (2009) utilized a single (N) case study design.

Gender differences in treatment outcome collaborated Altmeppen, Neumeier, Loew, Angerer and Lahmann, (2012) who reported gender differences in outcomes of a multimodal pain management program where women (.694) improved more in pain-related disabilities in daily life than men (.436). The researchers concluded that gender differences in MMT not only refer to chronic pain prevalence, pain perception, or experimental pain measurement, but also seem to have a clinically relevant impact on the response to pain therapy. Perhaps the possible explanation for this differences is that though all human beings are biological organisms the way male *behave*, emote, *sense, imagine, think and interact are* significantly different. Another possible explanation could be gender differences in decision-making which have been attributed to differences in information processing (van den Bos et al., 2013). Researchers argue that male attend more to global information by focusing on a single aspect of an overall task while women attend more to detailed information by combining multiple aspects of a task (Williams & Meck, 1991; Cahill, 2006; Andreana & Cahill, 2009). Furthermore, the selectivity model of information processing proposes that males process information selectively, relying more on the overall objective individual cues and heuristics, while females are more likely to comprehend and integrate all available details, including both subjective and objective information (Meyers-Levy, 1989).

Recommendations

On the basis of these findings, it is recommended that MMT interventions for adolescents must be ‘young people friendly’- age appropriate in terms of language, content and methods. The outcome of this study further show that the male treated with MMT had superior treatment gain. Moreover, the moderating effect of gender in this study point to the need for therapists to be gender sensitive when instituting MMT therapy. Put differently, MMT intervention should be designed taking into account the biological, physiological, socio-cultural differences between male and female.

The findings from this study suggest that Multimodal therapy is technically but not theoretically eclectic. It makes effective use of methods from diverse sources without relinquishing its social learning and cognitive theoretical underpinnings. It is suggested that future intervention should involve a multidisciplinary team, including health educator for extensive sexuality education, exercise psychologists to equip participants with skills of exercises and sports activities that will divert their energy away from risky sexual behaviours to a more rewarding sports and exercise.

Conclusion

The result of this study suggest that the use of Multimodal therapy tailored to the participants' characteristics was effective in changing value, beliefs and attitude in relation to sexual decisions. In addition, the participants acquired the skills of negotiation, assertiveness and refusal skills required to decline unwanted sexual advances. The participatory methodologies employed during facilitation captured and sustained the participants' attention throughout the sessions. Further, male had superior treatment gain compared to their female counterpart.

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References

Brown, J. E., & Mann, L. (1990). The relationship between family structure and process variables and adolescent decision-making. *Journal of Adolescence, 13, 25*-37.

Balafama A. Alex-Hart, & Okagua, J. 1 (2012). Sexual behaviours of secondary school students in Port Harcourt. *Afr Med J.* 12: 97.

Benotsch, E. G., Snipes, D. J., Martin, A. M., & Bull, S. S. (2013). Sexting, substance use, and sexual risk behaviour in young adults. *Journal of Adolescent Health*, 52, 307-313

Brennan, M. (2014). Ever wonder why adolescents make such bad decisions? *Psych Central*. Retrieved on December 19, 2015, from http://blogs. psychcentral.com/ balanced-life/ 2014/07 / ever-wonder-why-adolescents-make-such- bad-decisions/

CDC. Youth Risk Behavior Surveillance—United States, (2013). *MMWR* 2014; 63(SS-4)

Cahill, L. (2006). Why sex matters for neuroscience. *Nature Neuroscience Reviews*,7, 477-484

Coley, R. L., Votruba-Drzal E, & Schindler (2009) Fathers' and mothers' parenting predicting and responding to adolescent sexual risk behavior HS. *Child Dev*. May-Jun; 80.3:808-27. doi: 10.1111/j.1467-8624.2009.01299. x.

Commendador, K. (2007). The relationship between female adolescent self-esteem, decision-making, and contraceptive behavior. *Journal of the American Academy of Nurse Practitioners*, *19.11:* 614-623.

Federal Ministry of Health (2012). *National HIV/AIDS and reproductive health survey plus report 2012.* (Abuja: FMoH).

Friedman, I. A., & Mann, L. (1993). Coping patterns in adolescent decision-making: An Israeli-Australian comparison. *Journal of Adolescence*, *16(2,* 187-199.

Giedd, J. N., Blumenthal, J., Jeffries, N. O., Castellanos, F. X., Liu, H., Zijdenbos, A., Paus, T., Evans, A.C., & Rapoport, J. L. (1999). *Brain development during childhood and adolescence.*

Halpern-Felsher, B. L. Millstein, S. G., Ellen, J. M, Adler, N. E., Tschann J. M., Biehl M. (2001). The role of behavioral experience in judging risks. *Health Psychology*. 2001;20(2):120–126.

Havighurst, R. J. (1972). *Developmental tasks and education*. Edinburgh: Longman Group United Kingdom.

Imaledo, J.A., Peter–Kio, O. B., Asuquo, E. O. (2012). Pattern of risky sexual behaviour and associated factors among undergraduate students of the University of Port Harcourt, Rivers State, Nigeria. *Pan Afr Med J* 12:97

Isiugo-Abanihe, U.C., Erinosho, O., Ushie B., Aderinto A., Sunmola, Joseph, G. (2012). Age of sexual debut and patterns of sexual behaviour in two local government areas in southern Nigeria. *Afr J Reprod Health.* 16.4:81-94.

Mann, L., Harmoni, R., Power, C., Beswick, G., & Ormond, C. (1988). Effectiveness of the GOFER course in decision making for high school students. *Journal of Behavioral Decision Making*, 1.3: 159-168. doi: 10.1002/bdm.3960010304

Meyers-Levy, J. (1989). Gender differences in information processing: A selectivity interpretation. In Cafferata P. & Tybout, A. (eds.) *Cognitive and affective*

responses to advertising & gender differences in decision-making 19. MA: Lexington Books, 219-260

National Institute for Health and Clinical Excellence. (2008). *Mass-media and Point-of-sales measures to prevent the uptake of smoking by children and young people*

Ogrodniczuk, J. & Staats, H. (2002). [Psychotherapy and gender: Do men and women require different treatments?]. *Z Psychosom Med Psychother.* 48.3:270-85.

Ofole, N. M**.** & Agokei, S. T. (2014). Risky sexual behaviours among female in-school adolescents in Delta, Nigeria: Self-Esteem, Parental Involvement and Religiosity as Predictors. *European Scientific Journal,* 10.31: 157-177. 121

Ofole, N. M. (2015). Antecedents of risky sexual practices among adolescents in military secondary schools in Oyo State, Nigeria. *Ife PsychologIA* 23.2: 1-12.

Ojo, O. D. (2010). Multimodal counselling therapy: Strategy for learner support in distance learning. *Malaysian Journal of Distance Education* 12 .2: 1

Okonta, P. I. (2007). Adolescent sexual and reproductive health in the Niger Delta region of Nigeria--issues and challenges**.** *Afr J Reprod Health* Apr;11.1:113-24.

Omorodion, F. I. (2006). Sexuality, lifestyles, and the lures of modernity: Participatory rural appraisal (PRA) of female adolescents in the Niger Delta region of Nigeria. *Sexuality and Culture*.; 10.2:96–113.

Osher, D. (1996). *Working with students who are behaviourally challenging: A preliminary report*. Washington, DC: Chesapeake Institute.

Pieh, C. Altmeppen, J. Neumeier, S, Loew, T, Angerer, M, Lahmann, C. (2012). Gender differences in outcomes of a multimodal pain management program. *Pain.* 153.1:197-202. doi: 10.1016.

Radford, M. H., Mann, L., Ohta, Y., & Nakane, Y. (1993). Differences between Australian and Japanese students in decisional self-esteem, decisional stress, and coping styles. *Journal of Cross-Cultural Psychology*, *24.3:* 284-297.

Rotermann, M. (2012). Sexual behaviour and condom use of 15- to 24-year-olds in 2003 and 2009/2010. *Health Reports*, 23. 1:1-5.

Sedgh, G. Bankole, A., Okonofua, F, Imarhiagbe, C, Hussain, R.& Wulf, D. (2009). *Meeting young women's sexual and reproductive health needs in Nigeria.* New York: Guttmacher Institute

Udoh, I. A. (2006). *An educational training model for HIV prevention in the Niger Delta of Nigeria: A Delphi study*. North Dakota State University Doctoral dissertation.

Umeh, C. (2009). The management of homosexuality using multimodal therapy: A case study. *Ife PsychologIA* 17.1

UNICEF, WHO, The World Bank, United Nations Population Division. (2015). The Inter-Agency Group for Child Mortality Estimation (UN IGME). *Levels and Trends in Child Mortality. Report 2015*. New York, USA: UNICEF.

USAID. (2009). *Maternal health in Nigeria*. Accessed from http://pdf.usaid.gov/pdf_docs/ PNACR879.

Uwakwe, C. B.U, Amusan-Ikpa, S., Ofole, N.M., Akanbi, S.T, Ojukwu, M., Ejiofor, N. (2014). Socio-demographic factors as predictors of parents' perspectives on incorporating HIV and AIDS Education in Lagos state secondary schools, Nigeria: Behavioural science intervention implications. *The Counsellor*. 33.2.2014.

van den Bos, R., Homberg, J., & de Visser, L. (2013). A critical review of sex differences in decision-making tasks: Focus on the Iowa Gambling Task. *Behavioural Brain Research,* 238, 1, 95-108.

Walker, H.M., Horner, R.H., Sugai, G., Bullis, M., Sprague, J.R., Bricker, D., & Kaufman, M.J. (1996). Integrated approaches to preventing antisocial behavior patterns among school-age children and youth. *Journal of Emotional and Behavioral Disorders*, 4.4:194-209.

Williams, C. L., & Meck, W. H. (1991). The organizational effects of gonadal steroids on sexually dimorphic spatial ability. *Psychoneuroendocrinology*, 16, 1-3.

Table 1: Analysis of Covariance (ANCOVA) of post-test scores on sexual Decisions of participants by Treatment and Gender

Source of variations	Sum of squares	DF	Mean square	F	Sig	Remarks
Covariates	834.622	1	834.622	23.342	.000	
Pre sexual decision	834.622	1	834.622	23.342	.000	
Main Effects Treatment Group	709.411	1	709.411	.460	.011	S
Gender	503.612	1	503.612	.342	.032	S
2-way interactions Treatment x Gender	477.190	1	477.190	.932	.031	S
Explained	3113.421	4	778.355			
Error	12133.102	123	98.643			
Total	15246.523	127	120.051			

*=Significant at p<0.05

Table 2: Multiple Classification Analysis (MCA) of post test scores of participants based on treatment and gender on sexual decision

Variable + category Grand mean = 57.00	N	Unadjusted Deviation	Eta	Adjusted for independents + Covariates Deviation	Beta
Treatment		7.09		9.23	
1. Control		-7.09		-9.23	
2. Experimental	65				
	63		4.9		.44
Sex					
1. Male	71	.65		.34	
2. Female	57	-.55		-.110	.17
Multiple R Squared			.33		.546
Multiple R					.877