

Therapeutic Outcome of Self-Control and Social Interaction Interventions on Negative Body Image among in-school Adolescents with Low Health literacy in Southwest Nigeria

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ABSTRACT

Low health literacy is found to be consistently associated with negative body image. This study examined the effectiveness of Self-Control Therapy (SCT) and Social Interaction Skills Training (SIST) in managing negative body image among senior secondary school students with low health literacy in Southwest Nigeria. The design is pretest-post-test, control group quasi-experimental while the factorial matrix adopted was 3×2×3. Through multi-stage sampling, three Catholic Senior Secondary Schools in Southwest Nigeria were selected. Ninety (90) students, (Males=34, Females= 56) with age range of 14 years to 16 years were randomly selected and assigned to treatment conditions. The experimental groups were exposed to ten Sessions of treatments while the control group served as a comparison group. Body Self-Image Questionnaire-Short Form (BSIQ-SF) ($\alpha=0.83$), Health Literacy Scale($\alpha=0.88$), and Rosenberg Self Esteem Scale ($\alpha=0.81$) were used for data collection while Analysis of Covariance (ANCOVA) and Bonferroni test were used for data analysis. Results showed a significant main effect of the treatments on the negative body image of the adolescents ($F_{(2, 90)} = 1602.50$; partial $\eta^2=0.98$). Participants in SCT had the least adjusted post-test mean score (34.07), followed by SIST (35.23) and control (66.13) groups. Sex of the participants had no significant interaction effect on the treatment outcome. Participants with high self-esteem had a better reduction in managing negative body image (44.27) than those with moderate self-esteem (44.51) and low self-esteem (47.30). A two-way interaction effect of treatments and self-esteem was found. This result provides support for the use of SCT and SIST to manage negative body image of senior secondary school students. These two therapies are therefore, recommended to stakeholders as viable therapies for the treatment of negative body image.

Key words: Adolescents, body-image, Self-Control Therapy, Social Interaction Training

INTRODUCTION

The adolescence phase has received wide scholarly attention more than other phases of life because of its importance and influence on the individual. It is a stage of life during which an individual gives significant attention to self, peer acceptance and conformity, self-image, and other related issues. In this stage, adolescents worry about the evaluation and judgment of others about who they are and what they may be. This is a clear departure from the childhood experience where a child may not be concerned about how they look to others. Anýžová and Matějů (2018) observed that more attractive-ness has been linked to happiness, higher socio-economic status, success and happiness in life. Adolescents with low health literacy have been reported to have higher likelihood of having severe eating disorders and unhealthy behaviours which has the likelihood of culminating to negative body image (Koleoso et al., 2018; Asagba et al., 2016). According to US Department of Health Services and Health Promotion (2020), health literacy is an individual ability to obtain, process and understand basic

health information and services needed to make appropriate health decisions.

Oloruntoba (2007) noted that body sensitivity is a pervasive phenomenon in traditional Nigerian culture. According to the scholar, Yoruba people in South Western Nigeria adorn body parts using condensed similes and proverbs. For instance, there are metaphorical appellations; such as, *adùmáadán* (dark shiny-smooth), *aṣònbéporé* (smooth, palm-oil red), and *ẹlẹyinjú ẹgẹ* (one with graceful eyeballs) to mention a few. The implication is that Nigerian cultural settings also place a high premium on an individual's body image. This cultural value will seem to influence significantly the adolescent's quest to conform to societal standard. Body image is a multidimensional concept comprising perceptual, attitudinal and affective components (Boberová, & Husárová, 2021). Body image generally refers to how one perceives one's body and the resultant feelings about that perception. Body image can affect emotions, thoughts, relationships, and behaviours in everyday life (Quittkat et al., 2019). Dunstan et al. (2017) opined that how individuals

think, feel, and behave with regards to their own physique can be positive or negative. Negative body image is a result of negative thoughts and feelings about one's body. Body dissatisfaction is reported to be the major determiner of eating disorders, social anxiety disorder and body image disturbances. There is evidence that adolescents with low health literacy have higher probability of having negative body image than their counterpart with high health literacy (Boberová, & Husárová, 2021). They argue that low health literacy has the potential to impact a broad array of functional skills that are required to make health decisions in various settings. According to Rehm's (1981) model of self-reinforcement, individuals with negative body image frequently engage in self-reward and engage more frequently in self-punishment. Individuals with negative body image do not see "anything" good in their bodies, unlike others they consider to have "perfect" bodies.

Previous studies in this field of study were majorly descriptive surveys (Koleoso et al., 2018; Asagba et al., 2016; Boberová, & Husárová, 2021). Surveys can reveal important information about people's behaviours and attitude, but they do not have capacity to establish cause and effect relationship. There is paucity of experimental researches that attempted to modify negative body image among the Nigerian adolescents with negative body image. It, therefore, becomes imperative to examine the effectiveness of Self-Control and Social Interaction skills interventions on reducing negative body image of adolescents with low health literacy in catholic secondary schools in southwest, Nigeria. It is expected that the outcome of this study will proffer answers to whether the two treatments are effective in modifying negative body image as well as which of the treatments is more effective in achieving the result.

One treatment that has the potential to modify how the adolescents think and behave towards their body is Self-Control Therapy (SCT). SCT was fashioned after Frederick Kanfer's (1971) behavioural model of self-control. The self-control model contends that a condition results from a deficit in three processes of self-control (i.e. self-monitoring, self-evaluation, and self-reinforcement). Self-monitoring means observing and evaluating one's behaviour, including its antecedents (events preceding behaviour), and consequences. Two major characteristics that have to do with negative conditions, such as negative body image, are the tendency to attend only to negative events and the tendency to recognize only immediate consequences of behaviour. Alsalamah (2017) revealed that most of the students his studies showed improvement in their on-task behavior and academic outcomes after participating in a self-monitoring intervention.

Another therapy which holds promise for modifying body image distortion is Social Interaction Skills Training (SIST). This is because adolescents greatly value peer interaction, social acceptance and conformity. SIST is a form of interpersonal psychotherapy focused on improving the quality of a client's interpersonal relationships and social functioning to help reduce distress or disorder through

appropriate intervention (Miller & Halberstadt, 2005). The adolescents' current social skills must be assessed to determine which ones they already possess but do not use appropriately, which skills they do not have, and which skills would be the most important for school success and peer acceptance (Miller & Halberstadt, 2005). Miller and Halberstadt (2005) suggested using behavioural observations, rating scales, and adolescent self-reports to gather information on which social skills to target. The therapy focuses on treatment that can bring about rapid symptom reduction and improved social adjustment. This therapy provides strategies that help resolve issues in four major areas (Wilfley & Shore, 2015; Wurm et al., 2008). The first area is addressing interpersonal deficits, including social isolation and/or involvement in unfulfilling relationships. The second area has to do with managing grief or bad mood that could accompany feelings of negative image or body image dissatisfaction. The third concerns the transition from a major stage of life to another. For instance, when an individual moves from childhood to adolescence, it is always full of some social interaction issues, such as ensuring peer acceptability of one's physique. The fourth aspect of the therapy deals with interpersonal disputes that emerge from conflicting expectations between and among peers and significant others (Cuijpers et al., 2016). Studies (e.g., Ofole, 2016, Ofole & Onyebugwa, 2019) show that many personal, environmental and socio-economic factors could moderate the effectiveness of SCT and SIST. In this study the moderating effects of sex and self-esteem were examined in this study. Thus, the following null hypotheses were tested:

H₀₁. There is no significant main effect of the treatment (SCT and SIST) on reduction of negative body image among students with low health literacy in secondary school in Southwest Nigeria.

H₀₂. There is no significant interaction effect of the treatments and sex in reducing negative body image among students with low health literacy in secondary school in Southwest Nigeria.

H₀₃. There is no significant interaction effect of the treatments and self-esteem on the reduction of negative body image among students with low health literacy in secondary school in Southwest Nigeria.

METHOD

To achieve the objectives of this study, pretest, post-test, control group, quasi-experimental design with a 3×2×3 factorial matrix was adopted. The researchers guarded against extraneous variables' effects by randomizing the intact classrooms into two intervention groups and a control group. The design is presented on Table 1.

SAMPLE AND SAMPLING TECHNIQUE

A combination of simple random and purposive sampling techniques were adopted to draw out in multiple stages a sample size of ninety (90) participants out of approximately 550 students in Senior Secondary 11 (SS2) in Catholic Schools located in South western Nigeria.

Table 1. Treatment conditions

Pretest Condition	Experimental treatment	Posttest condition
O_1	XA_1	O_4
O_2	XA_2	O_5
O_3		O_6

Where O_1 , O_2 and O_3 are pretests across the groups

O_4 , O_5 and O_6 are post-tests across the groups

XA_1 = Experimental treatment with SCT

XA_2 = Experimental treatment with SIST

The effect of a treatment was measured using the control group for comparison

Stages

In Stage 1, the researchers used purposive sampling technique to select Oyo and Osun States out of the six states (Lagos, Ekiti, Ogun, Ondo, Osun, Ekiti and Oyo) in South western Nigeria. The reason is that it is only in those two states that the Catholic churches have schools with similar characteristics in South Western Nigeria.

In stage two, the researchers used Simple random sampling technique to select three Catholic Secondary Schools located in Osun and Oyo State (one at Osun state and two in Oyo state).

During the third stage, only students who met the inclusion criteria (those who scored from 40% and above in the positively worded Body Image Questionnaire (BSIQ-SF) were randomly selected. Higher scores indicate negative body image.

In the fourth stage, researchers used simple random sampling technique to select thirty (30) students earlier identified in stage three. In all, ninety (90) Senior Secondary School II students comprising thirty-four males (37.8%) and fifty-six females (62.2%) with an age range of 14 years to 16 years participated in the study.

Inclusion Criteria

1. The student should be a registered Senior Secondary School Two (SSS II) student.
2. Participant should have below 40% score on Body Image Questionnaire Scale.
3. Participant should abide by the rules and regulations guiding the intervention programmes.
4. Participant should sign their consent form and the school's authorization in place of parents' consent since they are boarders.

MEASURES

Four instruments were used for data collection as follows:

HEALTH LITERACY QUESTIONNAIRE (HAWKINS ET AL., 2017)

Health Literacy questionnaire was used to obtain data on participants' health literacy. The HLQ has 44 items and measures nine aspects of the multidimensional construct of health literacy. Items are scored from 1-4 in the first 5 scales (Strongly Disagree, Disagree, Agree, Strongly Agree), and from 1-5 in scales 6-9 (Cannot Do, Very Difficult, Quite Difficult, Easy, Very Easy). Typical items include: "Actively managing my health", "Appraisal of health information". The scale was revalidated on adolescents in Catholic schools not used for this study. The validity index obtained was $\alpha=0.88$.

BODY SELF-IMAGE QUESTIONNAIRE-SHORT FORM (BSIQ-SF) (LIM ET AL., 2018)

Body self-image questionnaire-short form (BSIQ-SF) developed by Lim et al. (2018) was adapted to measure body image perceptions of the participants. The revised 21-item of the Malay version BSIQ-SF was a valid and reliable instrument to measure body image perceptions of adolescents. This scale has four main sub-sections, which are 'Negative Affect' (8 items), 'Attractiveness Evaluation' (6 items), 'Physical Functionality Awareness' (4 items) and 'Height Dissatisfaction' (3 items). The item is positively worded anchored on four-point-Likert format from strongly agree to strongly disagree. Higher score suggests higher negative body image perception. According to the authors, the reliability coefficient was 0.85 (Cronbach alpha). The scale was subjected to a pilot study using 30 participants from a similar Catholic School in Ibadan, Oyo State. The reliability coefficient was 0.83 (Cronbach alpha).

BODY IMAGE SCALE (BIS) (LINDGREN AND PAULY, 1975)

The BIS was adapted from the original scale developed by Lindgren and Pauly (1975), which was used to assess adolescents' dissatisfaction with their bodies. The scale includes 30 body features, which the respondents indicated using 5 point Likert scale (very satisfied, satisfied, neutral, dissatisfied and very dissatisfied) the extent to which they satisfied with their body image. Each of the 30 items falls into one of three basic groups based on its relative importance as a sex-defining body feature: primary sexual characteristics (e.g. breasts), secondary sexual characteristics (e.g. hips) and the assumed hormonally unresponsive, neutral body characteristics (e.g. nose). The higher the score, the higher the likelihood of dissatisfaction with body image. The scale was subjected to a pilot study using 30 participants from a similar Catholic School in Osun State. The reliability coefficient was 0.78 (Cronbach alpha).

ROSENBERG SELF-ESTEEM SCALE (ROSENBERG, 1965)

The scale was designed by Rosenberg (1965). It is a ten-item scale for measuring self-esteem. The scale includes questions relating to positive and negative aspects of self-worth. All questions are answered using a four option Likert scale that ranges from strongly agree to strongly disagree. They are scored thus: 1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree. Scores can range from 0 to 40, with higher scores indicating higher levels of self-esteem. The researchers engaged 20 secondary school students as participants from a similar Catholic School in Ibadan in a pilot study to ensure its reliability. Results showed a Cronbach alpha of $\alpha = 0.81$.

TREATMENT PROCEDURES

The researchers visited each of the participating principals with a letter of introduction from the Department of Guidance

and Counselling, University of Ibadan, Nigeria. This visit was to elicit approval and cooperation for the research. Following this approval, the researchers recruited two research assistants who were postgraduate students trained for three days. The study was in three phases: Pre-intervention, Intervention and Post Intervention phases. The training was fixed two times a week to enable the students to participate in other school activities. The first phase covered the recruitment of participants using the screening instrument (Body Image Scale). The students who scored below 40% on the screening instrument were selected as possible participants in the study.

The second phase was the pretest phase. The three instruments were administered to the participants. The participants' scores at this stage in Body Self-Image Questionnaire-Short Form (BSIQ-SF) served as the pretest scores. The interventions followed. The three schools were randomly assigned to treatment packages such as SCT (Group I), SIST (Group II), and the Control Group (Group III). The experimental groups were exposed to ten weeks of treatment sessions to either SCT or SIST. Each session lasted for 1 hour with specific goals and objectives. The control group had no treatments but given a compensation lecture on "balanced diet" to prevent contamination of the study. Finally, the third phase was the post-intervention phase and the evaluation of the treatments' outcomes.

SUMMARY OF SESSION FOR EXPERIMENTAL GROUP 1: SELF-CONTROL THERAPY (SCT)

Experimental group one was treated with SCT. This intervention premised on the belief that negative body image results from an individual's deficits in self-control. The treatment package is based on Kanfer (1971). Three processes model of self-control, namely; self-monitoring, self-evaluation, and self-reinforcement. The original, six-week therapy was extended by the researchers to ten weeks in this study to prevent treatment relapse. In the first three sessions of treatments, participants informed of the justification for the intervention and how. They were exposed to the importance of self-monitoring which will hasten result. The skills for self-monitoring of their various mood were extensively explained. They were requested to get a log book where they recorded positive activities they experienced each day. The logs were reviewed and discussed during the subsequent session and participants were asked to analyze their data for patterns. They were specifically requested to look for correlation between the number of positive activities they experienced and their moods. In the fourth to sixth sessions self-evaluation was the focus. The participants were asked to identify goals and then break in into sub achievable goals. They were empowered with skills of solving some life problems using problem solving skills (Krulik & Rudnick, 1987). In the last phase of the treatment (seventh to nine weeks) the participants were trained on how to administer self-rewards and reinforcement as they progress toward the goals they earlier identified in the self-evaluation phase. At the termination of the self-control behaviour therapy intervention. The participants were provided with a summary of the program content and provided with materials to aid in the

continuation of the skills they had learned. This is to enable them sustain the acquired behaviour.

Session One

General introduction and pretest administration

Session Two

Introduction and description of the concept Negative Body Image

Session Three

Discussion on Self-Evaluation Skills

Session Four

Discussion on how to self-observe

Session Five

Group work on removal of templating situations and issues

Session Six

Skit on Self-Monitoring Skills

Session Seven

Demonstration of self-recording skills

Session Eight

Self-revelation, and exchanges of thoughts and feelings in groups

Session Nine

Simulation on application of self-reinforcement and pro-social skills

Session Ten

Conclusion, administration of post-test, appreciation and termination of therapy.

SUMMARY OF SESSION FOR EXPERIMENTAL GROUP 11: SOCIAL INTERACTION SKILLS TRAINING (SIST)

The second experimental group was treated with Social interaction Therapy. This is due to the fact that the devastating effects of negative body image is on the social aspect of individual life. Body image is said to depreciate an individual's social skill, as a result, social skill training was adopted to enhance interaction with significant others. Social skills modified the verbal and non-verbal, that will help the participants to communicate and interact effectively with friends, family, schoolmates and strangers. Demonstrations

and rehearsals were done on the following; how to maintain eye contact with others during conversation, greeting people with smiles, hand shaking when meeting people for the first time, using appropriate tone and volume of voice during discussion, expressing opinions to others, perceiving how others are feeling and showing empathy and appropriate emotional responses (e.g. crying when something bad happens; laughing when someone says something funny)

Session One

General introduction and pretest administration

Session Two

Administration of questionnaires and scales to identify specific skill deficit

Session Three

Insightful Videos & Podcasts on Body Image acceptance

Session Four

Demonstration on how to Start a Conversation using the ARE Method

Session Five

Role plays on different Ways to Say 'No' Politely a

Session Six

Practicing social problem solving

Session Seven

Imagining and visualization activity on social problems

Session Eight

Social Skills Coaching

Session Nine

Social Network Investment exercise

Session Ten

Conclusion, administration of post-test, appreciation and termination of the Therapy.

SUMMARY OF SESSION FOR CONTROL GROUP

Session One

General introduction and pretest Administration

Session two

Administration of post-test instrument, appreciation

Session Three

Compensatory lecture on COVID-19.

ANALYSIS OF DATA

ANCOVA was used to test the main and interaction effects of treatments, while Bonferroni Pair-wise comparison was used as post hoc analysis to determine the source of the significant differences in the groups

RESULTS

The demographic profile of the participants (n=90) shows that out of the total group, 34 constituting 37.8% were male while 56 out of the sample (62.2%) were female. The implication of this is that there were more female participants than the males. With regards to age range, out of the 90 respondent 37 (41.1%) were within the age range of 14-16years, 30 students (33.3%) were less than 14yrs, while 23 students (25.6%) were above 17yrs. This implies that majority of the respondents were within the ages of 14-16yrs. This could be as a result of the decline in age of admission into secondary schools in Nigeria. Unlike previous years, adults were found within the secondary schools setting. However, with the availability of distance learning education in like which is gaining prominence, most adults uptake it. The mean age of the intervention group was 14.5 years and the control group was 13.5.0 years

NULL HYPOTHESIS ONE

Analysis of Covariance (ANCOVA) was adopted to analyses the post-test scores of the participants on reduction of negative body image using the pretest score as the covariate to ascertain whether the post experimental differences are statistically significant. The summary of the analysis is presented in Table 2.

The results of testing null hypothesis one presented in Table 2 shows a significant main effect of treatments on the reduction of negative body image among adolescents in senior secondary II students, $F(2,90) = 1602.50, p < .01$, partial $\eta^2 = .978$. Table 2 shows that the calculated 'f' value of 1602.50 indicates that the main effect of treatments was significant at 0.01 level of significance. Hence, the null hypothesis was rejected. Therefore, there was a significant main effect of treatments (SCT and SIST) on the reduction of negative body image among adolescents in Senior Secondary School 11. The effect size reveals that treatments accounted for 97.8% (partial $\eta^2 = .978$) change in the negative body image of the participants. The Bonferroni post-hoc analysis was computed to provide further information and justification on the margin of difference between treatment groups and control group, and the result is shown in Table 3.

The margin of difference between treatment groups and control group in Table 3 indicates that there is a significant difference between SCT ($M = 34.07$) and the control group ($M = 66.13$). Similarly, there exist a significant difference between SIST ($M = 35.23$) and control group ($M = 66.13$). Furthermore, the table showed no significant difference between SCT ($M = 34.07$) and Social Interaction Skill Training

Table 2. Summary of 3×2 × 3 Analysis of Covariance (ANCOVA) showing the main effect of treatment groups on reduction of negative body image

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	20091.509 ^a	18	1116.195	197.329	0.000	0.980
Intercept	407.627	1	407.627	72.063	0.000	0.504
PRESCORE	0.683	1	0.683	0.121	0.729	0.002
Treatment	18129.162	2	9064.581	1602.500	0.000	0.978
SEX	5.591	1	5.591	0.988	0.324	0.014
SELF_ESTEEM	47.504	2	23.752	4.199	0.019	0.106
Group * Sex	34.943	2	17.472	3.089	0.052	0.080
Group * SELF_ESTEEM	83.402	4	20.851	3.686	0.009	0.172
SEX * SELF_ESTEEM	1.947	2	0.974	0.172	0.842	0.005
Group*Sex * SELF_ESTEEM	12.341	4	3.085	0.545	0.703	0.030
Error	401.613	71	5.657			
Total	203915.000	90				
Corrected Total	20493.122	89				

a. R Squared = 0.980 (Adjusted R Squared = 0.975)

Table 3. Bonferroni analysis showing significant differences among various treatment groups and control group

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
SCT	SIST	-1.16667	0.70504	0.305	-2.8878	0.5545
	CG	-32.06667*	0.70504	0.000	-33.7878	-30.3455
SIST	SCT	1.16667	0.70504	0.305	-0.5545	2.8878
	CG	-30.90000*	0.70504	0.000	-32.6211	-29.1789
CG	SCT	32.06667*	0.70504	0.000	30.3455	33.7878
	SIST	30.90000*	0.70504	0.000	29.1789	32.6211

*. The mean difference is significant at the 0.05 level

($M = 35.23$). The table also showed that SCT and SIST significant differed from

NULL HYPOTHESIS TWO

The second null hypothesis stated that there is no significant interaction effect of the treatments and sex in reducing negative body image among catholic secondary school students in Southwest Nigeria. The result presented on Table 3 shows that there was no significant interaction effect of the treatments and sex in reducing negative body image among catholic secondary schools students in Southwest Nigeria ($F_{2,42} = .089, p > .05, \text{partial } \eta^2 = .080$). Based on this result, we failed to reject null hypothesis two. Therefore, there is no significant interaction effect of the treatments and sex in reducing negative body image among catholic secondary school students in Southwest Nigeria.

NULL HYPOTHESIS THREE

This null hypothesis three predicted no significant interaction effect of the treatments and self-esteem in reducing negative body image among catholic secondary school students in Southwest Nigeria. The result presented in Table 4 shows that there was significant two-way interaction effect

of treatments and self-esteem in reducing negative body image among catholic secondary school students in Southwest Nigeria ($F_{4,42} = 3.686, p < .05, \text{partial } \eta^2 = .178$). This means that, the interaction of treatments and self-esteem accounted for about 17.8% change in the participants' reduction in negative body image. Consequently, the null hypothesis three was rejected. Therefore, there was significant two-way interaction effect of treatments and self-esteem in reducing negative body image among catholic secondary school students in Southwest Nigeria. This calls for further analysis to show the direction of interaction, as shown in Table 4.

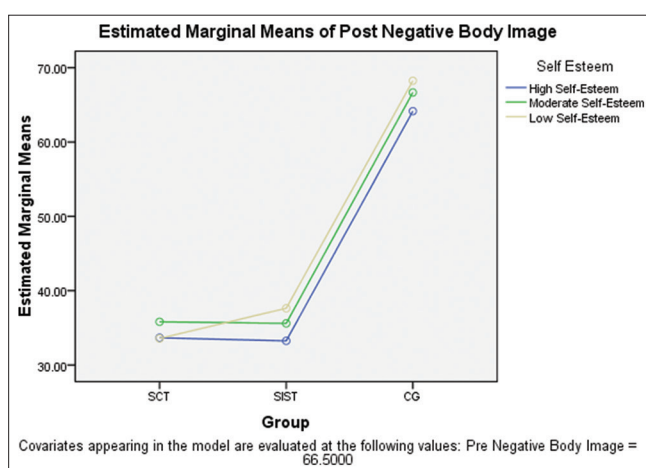
Table 4 and Figure 1 indicates that there is a significant difference across levels of self-esteem among the three groups. For instance, the mean of high self-esteem at SCT and SIST are 34.00 and 33.92; whereas it high self-esteem at CG is 64.00. Moreover, the mean of moderate self-esteem at SCT and SIST are 34.55 and 34.90; whereas it moderate self-esteem at CG is 66.67. Furthermore, the mean of low self-esteem at SCT and SIST are 33.57 and 37.62; whereas it low self-esteem at CG is 69.00.

DISCUSSION

The study results revealed a significant main effect of the treatments (SCT and SIST) on reducing negative body image

Table 4. Comparison statistics showing mean value of interaction of treatment and self-esteem

Group	Self Esteem	Mean	Std. Error
Self-Control Therapy	High Self-Esteem	34.000	0.681
	Moderate Self-Esteem	34.455	0.711
	Low Self-Esteem	33.571	0.891
Social Interaction Skill Training	High Self-Esteem	33.917	0.681
	Moderate Self-Esteem	34.900	0.745
	Low Self-Esteem	37.625	0.833
Control Group	High Self-Esteem	64.000	0.654
	Moderate Self-Esteem	66.667	0.786
	Low Self-Esteem	69.000	0.833

**Figure 1.** Graphical representation showing interaction effect of treatment and self-esteem on reduction of negative body image of the students

among adolescent students in Southwest Nigeria. In addition, there was no significant difference between SCT and SIST. The results of this study corroborate similar studies. Tangney et al. (2004) found that participants with high self-control were less likely to have eating disorders or problems with drugs or alcohol than participants scoring low in self-control. Tufail et al. (2016) similarly found that self-control and body image play significant roles towards weight reduction and weight acquisition. Self-control has been documented to effectively manage human behaviours with emphasis on regulating antisocial, delinquent and criminal behaviour, while its usage for treatment of negative body image is relatively rare (Brannstorm et al., 2016). This study thus adds to the extant literature on the effectiveness of self-control in treating negative body image. Furthermore, Piquero et al. (2010) found that self-control among adolescents often leads to significant behavioural change. Many reasons abound for the effectiveness of self-control training on adolescent behaviour. For instance, the main components of self-control like self-monitoring, self-evaluation and self-reinforcement are critical ingredients in changing negative thoughts and behaviours of individuals. Similarly, Cuijpers et al. (2016) observed that training that focused on self-monitoring has

greatly benefited students. Therefore, since self-control helps to achieve healthy self-evaluation and monitoring, an adolescent whose self-control capacity is enhanced through psychological training will positively view their body image.

The result of the second hypothesis showed that there was no significant interaction effect of the treatments and sex in reducing negative body image among catholic secondary school students in Southwest Nigeria. The outcome contradicts many previous studies who reported an interactive effect. For example, the reasons given by such studies for sex difference in therapy were sex specific inequalities such as hormones (Wood, 2012) brain structure (Reisberg, 1997) as well as the organization of the hunter-gatherer societies in which humans initially evolved (Schmitt et al., 2008). This differences is subsequently aggravated by cultural/societal expectations (Schmitt et al., 2008), which are likely to lead the two sexes to develop and maintain their social ties in different ways. The implication of this outcome is that male and female participants gained equally in therapy.

Further, this study revealed that participants with high self-esteem performed better than participants with moderate and low self-esteem to reduce negative body image. This result is inconsonant with significant numbers of previous studies. For instance, a negative body image is connected with low self-esteem (O'Dea, 2012; Abamara & Agu, 2014). In the same vein, Gleason et al. (2010) discovered that teasing about height was related to self-esteem in women but not as strong in men. Tantleff and Thompson (2010) found no significant correlation between breast size satisfaction and self-esteem in women but significant for men. One plausible justification for this result is that an individual with a high level of self-esteem has more confidence, self-worth and positive attitude than those with low self-esteem. This result could explain why participants with high self-esteem had a higher reduction of negative body image in the study.

The study showed a significant two-way interaction effect of treatments and self-esteem in reducing negative body image among adolescents. Moreover, there was a significant difference across levels of self-esteem among the three groups. The finding implies that the benefits the participants derived from the treatments depend on their level of self-esteem. This result confirms those of other studies (e.g., O'Dea, 2012; Abamara & Agu, 2014; Gleason et al., 2010) which found that individuals with high self-esteem perform better than people with low self-esteem when they were put through psychological treatments. This result is that individuals who have high self-esteem will have better self-efficacy to the point that they can affect behavioural change if given adequate training or exposure to psychotherapy.

IMPLICATIONS OF THE STUDY

The findings of this study have implications for students, parents, school administrators, counsellors, educational agencies and other stakeholders. The study confirms that psychotherapies are effective in ameliorating problems of body image among adolescents. This study reveals opportunities for helping students with body image problems to achieve realistic evaluations and expectations about their

bodies. This study provides parents with the necessary steps to ensure that their adolescent children can overcome negative body image. Additionally, this study will encourage teachers to look out for negative body image symptoms and refer such affected students to their school counsellors for professional diagnosis and interventions. School counsellors will find this study beneficial as it will serve as part of the repertoire of data and tools for school and adolescent counselling, broadening their professional strategies at helping students solve the challenges of negative body image and related problems connected to adolescence. This study also provides evidence for developing theories and models that will help explain and treat problems emanating from the negative body image of secondary school adolescents. Besides, this study amplifies that the psychosocial model of body image should be further looked into and developed since SCT and SIST proved efficacious in reducing negative body image.

CONCLUSION AND RECOMMENDATIONS FOR FURTHER STUDIES

This study revealed that SCT and SIST had significant main effects in reducing negative body image among adolescent students in Southwest Nigeria. In addition, it found that while self-esteem had a significant interaction effect on remediating negative body image sex does not have. Consequently, SCT and SIST should be incorporated into all schools' school and educational counselling programmes to reduce students' negative body image. Furthermore, there is a need for adequate efforts to enhance the self-esteem of adolescent students, as such steps will help students develop a positive image of their bodies. Therefore, counselling psychologists should ensure that appropriate enlightenment is done to help adolescent students develop and establish positive body image using psychotherapeutic treatments.

The generalization of the outcome of this study should be done with caution due to some limitations. One is that this study was carried out shortly before the coronavirus pandemic in Nigeria. Activities were rushed because of the anticipation that the virus could interrupt many human activities. This tense atmosphere might have affected the study outcome. A replication of this study might help to strengthen the study outcomes further. Another limitation is that only Catholic owned schools were used, though for obvious reason, they were hardly targeted in previous studies, however, it will limit generalization of this study to only Catholic owned schools. There is a need to replicate the same in other schools owned by other religions. It is desirable to replicate such a study on students in public school. It is worthy of note that there could be some extraneous variables which may contaminate the outcome of this study. However, ANCOVA used for data analysis is a robust statistical tool which has the capacity to reduce such factors to covariates. Nevertheless, this research adhered strictly to the design and methods of executing a study of this nature, the results are valid notwithstanding the outlined limitations.

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