

BREAKING BARRIERS: PSYCHOEDUCATION AS A VIABLE TREATMENT FOR PSYCHOLOGICAL DISTRESS IN LOW-INCOME ADOLESCENT POPULATION

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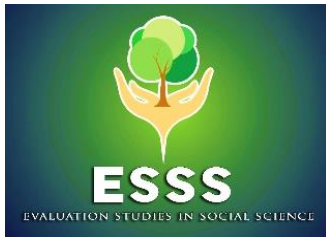
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ABSTRACT

The high occurrence of mental health issues among adolescents in low-income countries is a significant public health concern with limited evidence-based treatment documentation. The study evaluated the effectiveness of psychoeducation as a viable treatment for psychological distress among in-school adolescents in low-income setting. Using quasi-experimental pre-test post-test control group design, data were collected using a standardized self-report questionnaire (DASS-21) from 240 students in four co-educational secondary schools in Oyo-East Area Council of Oyo State, Nigeria. Forty-eight participants with a mean age (13.02; SD±1.97), scoring above the mean (M=30.6) were gender-matched and randomly placed into intervention and control groups, each comprising 24 participants. Results revealed that psychoeducation effectively reduced psychological distress symptoms in the experimental group after six weeks of exposure ($t(22) = 5.11, p < 0.001$). A significant mean difference in psychological distress measures at pre-test (M= 49.5; SD = 21.4) and post-test (M=19.1; SD=13) was observed. One-month follow-up, the experimental group exhibited a significantly lower level of psychological distress ($t(19) = 7.12, p < 0.001$), while the control group's distress levels remained high ($t(19) = 0.43, p > 0.05$), with no significant difference in pre-test measures. Psychoeducation should be considered as a viable treatment for psychological distress symptoms, especially where trained experts may not be available to administer cognitive-behaviour therapy in low-income countries. The study concluded that psychoeducation is effective in alleviating psychological distress in adolescents. With this result, additional research is necessitated to establish psychoeducation as a viable treatment option.

Keywords: *Adolescents, Effectiveness, Psychoeducation, Psychological distress*

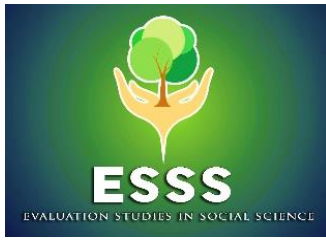


INTRODUCTION

Adolescence has been indicated to be a critical growth period that places a series of developmental demands capable of precipitating and perpetuating mental health issues when awareness and treatment interventions accessibility and availability are lacking (Drapeau et al., 2012; UNICEF, 2021; WHO, 2022). Concerns regarding mental health challenges among adolescents persist on a global scale as 1 in 7 adolescents experiences a mental health disorder, with about 50% of such disorders taking onset before the mid-adolescence age of 14 (World Health Organization, 2020; Lee et al., 2017; Kessler et al., 2007).

Regarding adolescent mental health issues, studies have shown that globally, psychological distress stands out as the most widespread mental health condition affecting this population (UNICEF, 2021). Specifically, 1 in 5 adolescents suffers from psychological distress worldwide (UNICEF, 2021). That is, over 40% of individuals in the age range of 10 to 19 years globally experience psychological distress, characterized by probable depression and anxiety symptom comorbidity (UNICEF, 2021, 2022; WHO, 2020). Globally, in a worst-case scenario, higher incidences of psychological distress are found among low-income countries, with limited data on treatment intervention (Eze et al., 2023; Shorey et al., 2022; UNICEF, 2022). Researchers have shown that 3 in every 10 adolescents enrolled in secondary schools in low-income countries experience psychological distress (Akanni & Otakpor, 2016; Alinnor & Okeafor, 2023; Anyanwu, 2021; Diab et al., 2018; Girma et al., 2021; Mridha et al., 2021; Nabunya et al., 2020; Oderinde et al., 2018; Pengpid & Peltzer, 2020; Saiful et al., 2021). Psychological distress, marked by unpleasant emotions and often accompanied by symptoms such as depression (e.g., loss of interest, sadness, hopelessness) and anxiety (e.g., restlessness, feeling tense), poses a threat to the overall well-being—both physical and mental—of individuals, particularly among adolescents (Drapeau et al., 2012; Kalin, 2020). Also, psychological distress is considered a condition of emotional hardship linked to stressors and challenges that are difficult to manage in everyday life (Arvidsdotter et al., 2016). Furthermore, psychological distress has been considered as a condition typified by somatic symptoms as well as depression and anxiety (WHO, 2019; Drapeau et al., 2012). Similarly, intense worry, fear, sense of being exposed, restlessness, unpleasant thoughts, and feeling of social isolation are among the emotional aspects associated with the occurrence of psychological distress among adolescents (International Encyclopedia of the Social & Behavioural Sciences, 2015).

Surveys conducted across the globe have revealed that adolescents frequently experience psychological distress. For example, a Canadian study found 35% of cases (Arbour-Nicitopoulos et al., 2012). Likewise, around 54% of students in China and 40% of students in Saudi Arabia, respectively, displayed psychological distress symptoms (Huang et al., 2019; Saquib et al., 2017). Also, in US a prevalence of 15.8% was observed (Daly, 2022). Again, teenagers with psychological distress are highly prevalent in low and middle-income nations (Shorey et al., 2022). As an example, in a cross-sectional study involving Indian students, the proportions of individuals experiencing mild, moderate, and severe psychological distress were 10.5%, 5.4%, and 4.9%, respectively (Jaisoorya et al., 2017). Additionally, in Zambia, 15.7% of adolescents exhibited psychological distress (Siziya & Mazaba, 2015), while students in

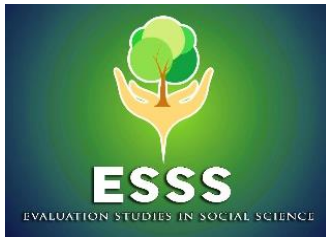


Tanzania (Pengpid & Peltze, 2020) documented 20.6% experiencing singular psychological distress and 10.3% facing multiple psychological distress. Likewise, a 57% prevalence of psychological distress was identified in a sample of secondary school students in Uganda (Anyanwu, 2021). Similarly, a 28% prevalence of psychological distress was noted in a sample of adolescents enrolled in secondary school in Ethiopia (Girma et al., 2021). Also, a prevalence of 21.9% psychological distress has been documented among adolescents attending schools in Nigeria (Alinnor & Okeafor, 2023).

Despite the definition or description ascribed to psychological distress in literature, the experience of psychological distress symptoms induces emotional suffering, discomfort, and functional impairment in daily living especially when elevated symptoms are experienced and not treated. An issue of public health, psychological distress has an impact on teenagers' day-to-day functioning in the community, in their relationships with family and friends, and their performance at work and in school (WHO, 2021). Notably, researchers have highlighted that compromised mental health in adolescents is linked to various high-risk behaviours, including suicide, self-harm, substance use and abuse (tobacco, alcohol consumption), risky sexual behaviours, and exposure to violence. These effects persist throughout the life-course and carry significant implications, including health decline, impairment, and, in severe cases, mortality, especially when left untreated (Nabunya, et al., 2020; WHO, 2020; 2022).

In addition, poor mental health among adolescents has equally been linked with negative outcomes such as poor grades, early dropout from school, and difficulty in social relations, including the inability to lead a meaningful, happy life as adults by adolescents who suffer from psychological distress (UNICEF, 2021, 2022; Zeng et al., 2022). Sadly, studies have shown that a significant number of adolescents who suffer psychological distress often are ignored, and treatment needs remain unaddressed (Alonso et al., 2018; UNICEF, 2022). The scarcity of experts that can administer evidence-based cognitive behaviour therapy and data on alternative brief treatment interventions such as psychoeducation recommended by researchers has further aggravated access to treatment and perpetuated the increasing number of adolescents suffering from psychological distress within economically disadvantaged nations unabated (Donker et al., 2009; Purgato et al., 2018; UNICEF, 2021). With a 30% global point average increase in adolescents suffering from psychological distress; depression, and anxiety, the need for urgent studies on alternative psychological treatment intervention has become more imperative, particularly in medium and low-income countries with the highest adolescents global population, paucity in trained cognitive behaviour experts, and high prevalence of psychologically distressed adolescents (Daly, 2022; Ghandour et al., 2019; Shorey et al., 2022; UNICEF, 2021; 2022).

In comparison with other psychological treatment interventions, psychoeducation has been argued to be an adjunct treatment rather than a standalone psychological treatment intervention (Cuesta-Lozano et al., 2022; Bevan Jones et al., 2018). Cognitive behaviour therapy as an example has received considerable empirical and evidence-based support as the first line of treatment option in addressing adolescents' psychological distress symptoms; depression, and anxiety worldwide (Alonso et al., 2018; Chidi et al., 2020; Cuijpers et al., 2021; Eze et al., 2023; Oud et al., 2019). However, its accessibility, and availability remains a great



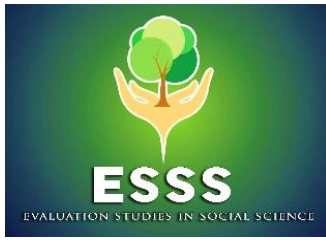
challenge, especially among low-income countries like Nigeria which has high adolescents population (Doris, 2023; NBS, 2020), with a high prevalence of psychological distress (Alinnor & Okeafor, 2023; Cui et al., 2022; Okwaraji et al, 2018).

In addition, the high skill demand in cognitive behaviour therapy, and the sparseness of clinicians and trained experts that can administer cognitive behaviour therapy remains a huge problem in the use of cognitive behaviour therapy in addressing psychological distress prevalence in low-income countries including Nigeria (Eze et al., 2023; UNICEF, 2021; WHO, 2020). The obvious remains that psychologically distressed adolescents have little or no access to evidence-based psychological treatment intervention aimed at reducing distress symptoms despite the associated negative health consequences such as suicide, substance use, and abuse (UNICEF, 2021). Despite various studies conducted on psychological distress and its implicated health negative consequences including further vulnerabilities, there is a rising need for global urgency on treatment accessibility and availability, and empirical data on the effectiveness of psychological interventions, particularly in low- and middle-income countries with a heightened incidence of psychological distress symptoms in adolescents (Eze et al., 2023; Shorey et al., 2022; UNICEF, 2022).

As it stands, little attention has been paid to psychoeducation as mono-therapy especially in low-income countries like Nigeria despite researchers' suggestion of its use as a viable treatment alternative in mitigating psychological distress, where there is a scarcity of experts who can administer established effective psychological treatment such as cognitive behaviour therapy (Australian Psychological Society (APS), 2018; Bevan Jones et al., 2018a; Donker et al., 2009; Lukens & McFarlane, 2004; Olashore et al., 2023; Papini et al., 2023). In a country where there is 1 clinician to over 5000 persons (Obubu et al., 2023; Onah et al., 2022), paucity of data on evidence-based psychological treatments and treatment awareness among distressed adolescents (Eze et al., 2023; Jibunoh & Ani, 2022), it has become imperative to consider the efficacy of psychoeducation as standalone treatment intervention on psychological distress among adolescent particularly in-school adolescents.

Furthermore, research findings indicate that cognitive-behaviour therapy remains effective in alleviating psychological distress symptoms in adults dealing with mental health conditions in Nigeria (Amoke et al., 2020; Chidi et al., 2020). However, there is a paucity of data on the effectiveness of such treatment interventions for distressed in-school adolescents (Alinnor & Okeafor, 2023; Anyanwu, 2021; Cui et al., 2022; Eze et al., 2023; Jibunoh & Ani, 2022). Additionally, the insufficiently trained experts in cognitive behaviour therapy remain a major challenge to its commonness in usage among the population of distressed individuals especially in Nigeria (Obubu et al., 2023; Onah et al., 2022), and the need for viable treatment alternative such as psychoeducation (Bisji Simon et al., 2019; Jibunoh & Ani, 2022; Olashore et al., 2023; Papini et al., 2023).

Likewise, as research consistently confirms the effectiveness of cognitive-behaviour therapy for distressed adolescents in Nigeria (Amoke et al., 2020; Ezegbe et al., 2019; Bella-Awusah et al., 2016; Chidi et al., 2020), there is minimal or no available data regarding the effectiveness of psychoeducation as an independent treatment modality for psychological distress, specifically among individuals in the age range of 10 to 19 years. For example, a



systematic review of therapeutic intervention revealed that findings on psychoeducation efficacy with a control group were not significantly effective after three sessions (Eze et al., 2023).

In a similar vein, a control clinical trial of psychoeducation of three therapeutic sessions among in-school adolescents with elevated anxiety symptoms was not significantly effective (Jibunoh & Ani, 2022). However, a study done on the effectiveness of psychoeducation on psychological well-being measured with the Adolescents' Mental Health Continuum (Short form) among in-school adolescents in Nigeria shows that psychoeducation was effective after the four-session period (Bisji et al., 2019). Considering the mixed findings, and immense benefits of psychoeducation as a treatment intervention including being cost-effective, it is imperative to consider a psychoeducation treatment efficacy with a control group among distressed in-school adolescents (Papini et al., 2023).

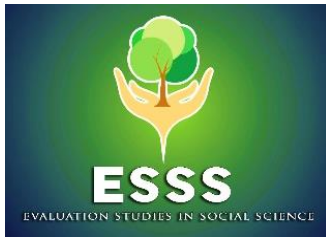
Consequently, in response to the pressing issues of psychological distress and its associated negative consequences, including suicide, self-harm, and substance abuse, along with the limited availability of experts capable of administering cognitive-behaviour therapy, there is a critical need for more research aimed at evaluating the effectiveness of psychoeducation in reducing psychological distress among adolescents. This study seeks to examine the effectiveness of psychoeducation as a viable treatment intervention on psychological distress in in-school adolescents experiencing elevated distress symptoms, particularly in low-income countries such as Nigeria.

The hypothesis posits that participants in the intervention group, following the psychoeducation treatment intervention, will report significantly lower levels of psychological distress symptoms compared to the control group participants who did not receive any treatment. Additionally, the intervention group participants are expected to report significantly lower psychological distress levels at follow-up compared to their pre-test and post-test measures.

METHODOLOGY

Research Design

The research employed a quasi-experimental design with a pre-test and post-test control group. Study design gives participants equal opportunity for inclusion in the study. A total of 48 students matched by gender (24 each) were randomly selected from four co-educational secondary schools. To assess psychological distress, participants were administered the 21 item Depression, Anxiety, and Stress Scale (DASS21) to obtain the necessary pre-test (baseline) scores. Out of the total of 240 participants, 6 students each from the selected schools matched by gender, with a mean score of 30.62 and above on the psychological distress measure were allocated randomly into two groups (intervention and control). Each of the group has 24 participants assigned by ballot. By balloting, 11 coeducational secondary schools list was obtained purposively, and assigned name codes written on pieces of paper. These papers were wrapped and put together in a paper bag with 4 study assistant having no prior knowledge



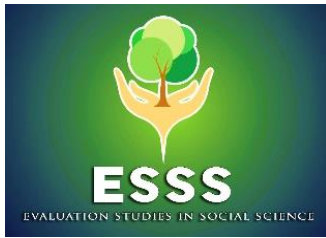
selecting a paper each from the paper bag. 240 coded questionnaires were administered in the 4 schools having obtained informed assent and consent, and a group size sample determination using a-priori sample size calculator for the student t-test (Soper, 2023) and Cohen's (1988). Once more, by ballot technique, list of 240 students were made by assigning codes. 4 study assistants blindly named A1, A2, B1 and B2 were asked to select 6 coded wrapped papers, placed picked paper in two plastic cup labelled A and B. Study assistants with As and Bs name codes placed their picks in the plastic cup labelled A and B respectively. After 3 rounds of selecting from the pool of wrapped paper list bag, 48 students matched by gender, with a mean score of 30.62 and above on the psychological distress measure, were drawn from the list of the total students. While the intervention group in cup A as assigned by the researcher received six sessions of manualized psychoeducation treatment condition, the control group in cup B received just one-off psychoeducation after the six-week intervention period. Six session psychoeducation treatment manual utilised was adapted on Papini et al. (2023) psychoeducation treatment model.

Setting

The research was carried out within the Oyo-East Area council of Oyo State, which is primarily characterized as an agrarian rural region (Ajuwon & Sandhu, 2018). For the treatment intervention, a school hall was selected based on its suitability, considering factors such as accessibility, the availability of seating, power supply, security, and cross ventilation. Additionally, the availability of school's infirmary was taken into account, to ensure that participants with health issues during the sessions could promptly receive medical attention from the school's healthcare professionals. Oyo-east encompasses several agrarian rural communities, including Apaara, Apinni, Balogun, Jabata, Agboye, Molete, Ajagba, Alaodi, Modeke, Oke Apo, Oluajo, Owode, Araromi, and Kosobo, where the council headquarters is situated. Among these, Kosobo, hosting the council headquarters, was selected as the study setting due to its improved accessibility through the transport system. The choice of rural area for the study was influenced by previous research findings indicating a high prevalence of mental health conditions among adolescents residing in rural communities (Amoran et al., 2007; Amoran et al., 2005; Girma et al., 2021; Oderinde et al., 2018).

Participants

The research involved a total of 48 participants assigned into treatment and control group, evenly distributed by gender, with 24 males and 24 females, falling within the age range of 10 to 18 years. A list of 240 participants was created using the ballot technique. Four study assistants, blindly named A1, A2, B1, and B2, selected 6 coded wrapped papers each and placed them into two plastic cups labelled A and B. Papers chosen by study assistants with A1, A2 were placed in cup A, and those with B1, B2 were placed in cup B. Each group comprised an equal number of 12 females and 12 males after 4 rounds of selection from the list as wrapped coded papers contained in a paper bag. The participants exhibited an average psychological distress score of 30.62 with a Standard Deviation (SD) of 21.30. Additionally, the average age



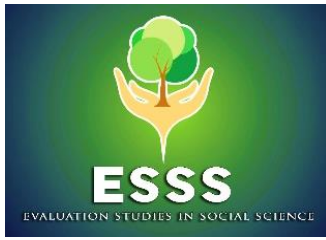
of the study participants was 13.02 (SD = 1.97). Concerning psychological distress, the pre-test mean score was 49.25 (SD = 20.94) for the intervention group and 49.58 (SD = 17.84) for the control group. After the six weeks treatment intervention, the study questionnaire was once more administered and at a month follows up period to the control treatment and group participants. Inclusion of participants requires that the participants must be a registered student of the school, be an adolescents within the age bracket of 10 – 19 years of age and scored at least 30.6 and above on the psychological distress measure administered. Also, exclusion criteria is being non-registered students of any the four selected school, not within the required age bracket of 10 – 19 years and did not have a pre-test score of 30.6 above on administered psychological measure drawn list.

Sample Size Determination

The A-priori sample size calculator for the student t-test (Soper, 2023) and Cohen's (1988) statistical power analysis for behavioural sciences were utilized to establish the group size of participants. Factors such as the significance level, effect size, desired power, and estimated variance, as suggested by Penyelidikan (2006) and Uakarn (2021), were taken into account. This included an anticipated effect size (d) of 0.90, a desired statistical power level of 0.80, a probability level of 0.05, and a significance level of 0.05 (two-tailed) entered into the A-priori sample size calculator (refer to Soper, 2023). The resulting determination was a maximum total sample size of 42 per group (two-tailed) and a minimum sample size of 21 per group (two-tailed). Additionally, an extra 3 participants were added to the established minimum sample size of 21, resulting in each group having 24 participants. This adjustment was made to account for potential attrition of participants, sizeable management of the participants in group and to ensure equal gender matching.

Measurements

The Depression, Anxiety, and Stress Scale (DASS) has been widely utilized and proven reliable worldwide among adolescents with translation into different languages (Medvedev, 2023). Among Nigerian students, an investigation aimed at establishing the psychometric properties of the 21-item version of the DASS demonstrated excellent reliability, with Cronbach's alpha values of 0.81, 0.89, and 0.78 for the depressive, anxiety, and stress subscales, respectively (Coker et al., 2018). In the present study, the Cronbach alpha values were 0.74 for the 21-item scale, and 0.63, 0.34, and 0.52 for the depression, anxiety, and stress sub-scales, respectively. The DASS-21, is a shorter version of the DASS-42 developed by Lovibond & Lovibond (2018), is designed to assess non-categorical mental disorders such as mild – severe symptoms of depression, anxiety and stress. It functions as a self-report scale with three subscales measuring depression, anxiety, and stress symptoms. Each subscale consists of 7 items scored on a Likert scale ranging from 0 (did not apply to me) to 3 (applied to me very much). The scoring is interpreted across four categories: normal, mild, moderate, and severe. Higher scores indicate a greater severity of symptoms in the individual. For participant inclusion in the study,



a mean score of 30.6 and above was adopted. This score falls within the moderate to severe level index of psychological distress.

Procedure for Data Collection

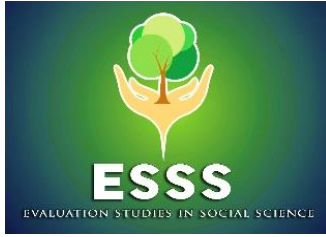
Informed permission and consent letters were prepared for each of the four randomly selected schools following the acquisition of Ethical Approval for the study from the Covenant University Health Research Ethics Committee (CHREC) under the approval numbers NHREC/CU-HREC/11/04/2023 and CHREC/208/2023. Participants informed assents were from the schools' management on behalf of the participants. Again, verbal voluntariness in partaking in the study was communicated to ensure that the participants have the right to choose not to participate by simply informing the researcher verbally. Subsequently, the study questionnaire was distributed to the participants in the school's hall, taking approximately 10 to 15 minutes for completion. The filled questionnaires were promptly collected. Following the questionnaire administration, participants scoring a mean score of 30.6 and above were randomly assigned to either the treatment intervention or control groups. This mean score and above falls within the moderately – severe index norm of the DASS-21 (Lovibond & Lovibond, 2018). The participants in the intervention group were exposed to 50 minutes per session for six weeks of psychoeducation treatment intervention which entails the bio-psychosocial model of mental illness by Engel (Wade & Halligan, 2017). The treatment manual entails imparting knowledge as follows: Session 1, building of therapeutic support; Session 2, understanding psychological distress and symptoms; session 3, biological understanding of psychological distress and symptoms; session 4, psychological understanding of psychological distress and symptoms; session 5, social understanding of psychological distress and symptoms, and session 6, understanding of psychological distress and what can be done. Upon the conclusion of the sixth session, the study questionnaire was once again administered to obtain post-test scores. Furthermore, a follow-up assessment was conducted four weeks after treatment, and the study questionnaire was re-administered to evaluate the enduring treatment effects. Furthermore, the six psychoeducation sessions based on the bio-psychosocial model of psychological distress teach how biological, psychological, and social factors can predispose, precipitate, and perpetuate psychological distress as a mental health condition.

Procedure for Psycho-Education Treatment Intervention

The sessions hold after school with the use of slides projected on each day and once per week for six weeks. Availability of power supply enabled adequate ventilation and snacks (refreshments) given at the end of sessions. The participants' attendance roster is called after the session's entry behaviour.

Entry Behaviour

The entry behaviour of the researcher checked on participants' feelings, daily activities and on any others concerns. At least four participants (2 males and females) were called randomly at



each session to speak briefly on their day's experiences including classroom and arriving at the venue. Applause was given to each speaker for communicating their experience. This section lasted 10 minutes.

Feedbacks

The points arrived at in previous session were asked and the participants at least eight responded by stating one point each. For example, what did you learn or pick from last session? Have you anything in mind from the past or last session you would like to mention? This activity lasted 10 minutes.

Treatment Commencement

The researcher introduces the intervention topic in slides using projector, the flying-in slide presentation mode. The researcher reads the content, explains and asks the participants to make meaning of the content to ensure mastery. In addition, 4 participants were asked to demonstrate what they feel, think or understood as communicated by the researcher individually and in pairs at times. This lasted 20 minutes.

Rounding Up Meeting Session

The researcher entertains questions and encourages all to ask questions. Also, the participants (a male and a female) were appointed to appreciate the participants and see to the sharing of the session's day refreshments to the group members. This lasted 10 minutes. The six psychoeducation treatment sessions' materials and activities based on the bio-psychosocial model of psychological distress were prepared on slide and projected at each lesson session. Each lesson slides projected included images, pictures, writing prompts, questions, explanation to facilitate knowledge, retention and memory recall of lesson contents. Table 1 provides session 1 to 6 contents summary.

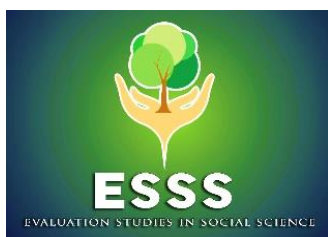
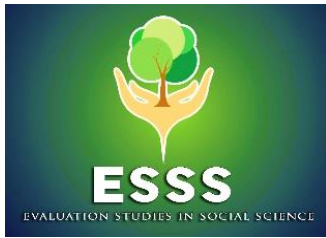


Table 1

Delivery of Psycho-Education Treatment Material

Session Purpose	Content/activity	Goal
1. Building of therapeutic Rapport and support.	Orientation to the rules, tasks and expectation during the six weeks intervention session.	
	Introduced psychological distress, definition of psychological distress and need for intervention sessions.	To enable each member to participate freely, orderly.
	Question Prompt: What does psychological distress means to you? Participants responses included feeling sad; what you feel that you can't express; being mad; unhappy; angry.	To elicit what participants' feels, thinks psychological distress is.
	Activity: participants' verbal expression of what they understood by psychological distress. Standing up to express one's view and being clapped for. Reward: sharing of refreshment (snacks) by 2 appointed members of the group, male and female.	To foster group, familiarity and belongingness.
2. Understanding psychological distress and symptoms.	Introduced bio-psychosocial model of PD, Assesses feedback on prior knowledge such as it may be hereditary (biological), thinking, feeling (psychological), and environment, friends, relationships (social). Examples and symptoms mentioned: depression, anxiety; poor concentration, feeling guilty, easily annoyed.	To enable participants understand what psychological distress is and its symptoms.
	Question Prompt: think of when you were PD, what happened? How did you feel?	To help participants understand that distress can be bio-psychosocial.
	Activity: participants' were told to mention or verbally express what they thought of or remembered. Standing up and coming in front to express one's thinking was applauded.	



Assignment: List at least 4 symptoms of psychological distress you have experienced when in school or at home.

Reward: sharing of refreshment (snacks) by 2 appointed members of the group, male and female.

3. Biological understanding of psychological distress and symptoms.

Introduced bio-psychosocial model of PD. Assesses feedback on prior knowledge, examples and symptoms mentioned and identified: headache, can't breathe well, crying, can't sleep well, sleeps a lot in class, can't remembered anything learnt.

To enable participants understand the feelings of PD biological symptoms.

Question Prompt: think of when you were PD, how did you feel?

To help participants understand and identify biological symptoms and how it affects physically.

Activity: participants' were told to remembered when they were PD, describe how you felt in your body; heartbeat, breathing, skin. Mention or describe what you remembered. Standing up and coming in front to express one's feeling was applauded.

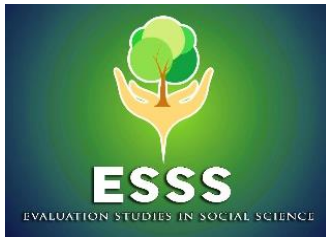
Assignment: Write down at least 2 experience of psychological distress when in school or at home. Describe how you felt in your body within the last week.

Reward: sharing of refreshment (snacks) by 2 appointed members of the group, male and female.

4. Psychological understanding of psychological distress and symptoms

Introduced bio-psychosocial model of PD. Assesses feedback on prior knowledge, examples and symptoms mentioned and identified: I was told I was stupid, my friend stepped on me and did not tell me sorry, I was called idiot. I think I am not good.

To help participants understand and identify psychological distress symptoms and



Question Prompt: think of what happened? How you viewed it or interpreted it? Positive or negative you. How did you express your feeling?

causation of distress.

Activity: 2 set of participants were asked to describe or share what they would had done if called stupid, how you felt in your body; heartbeat, breathing, skin. Standing up and coming in front to express one's thought, emotion was applauded.

Assignment: Write down at least 4 experience of psychological distress when in school or at home. Describe how you viewed it, positive or negative and how you felt in your body within the last week.

Reward: sharing of refreshment (snacks) by 2 appointed members of the group, male and female.

5. Social understanding of psychological distress and symptoms

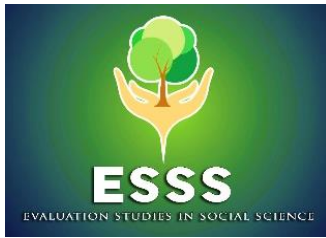
Introduced bio-psychosocial model of PD. Assesses feedback on prior knowledge, examples and symptoms mentioned and identified: no be like me; everyone hates me; I feel something bad will happen in class; they don't think I am good; I dodge the class; I stay alone.

To help participants relate social experience to physical, behaviour effects.

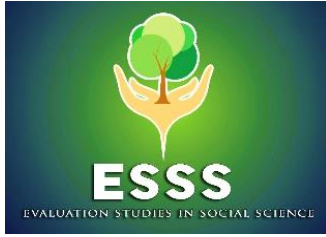
Links physical symptoms, thinking, feeling and responses, bodily expression, behaviour with what happens

Question Prompt: remember when you felt sad, what happened, what was or were your view of it, and what you did. Standing up and coming in front to express one's thought and knowledge was applauded.

Assignment: draw a table; list at least 4 experience of psychological distress as



- psychological, biological and social cause.
And describe how you feel.
- Reward: sharing of refreshment (snacks) by 2 appointed members of the group, male and female.
6. Understanding of psychological distress and what can be done
- Re-introduced psychological distress, definition of psychological distress, catalogue of symptoms mentioned and causes.
- Introduces what can be done: Action moves.
- Identify the symptoms; biological, psychological and/or social. What are the reasons/causes? biological, psychological and/or social.
- To help participants have awareness of what to do.
- Speak to the school counsellor. Share with your feelings or thoughts with some your trust such as parents, friend, teachers, siblings.
- Practice cognitive behaviour skills such as breathing relaxation, exercise, listening to songs, positive self-talk.
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RESULTS

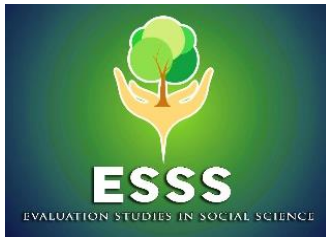
Table 2

Frequency and Descriptive Statistics of Study Participants

Variable	Frequency	Percent (%)
Gender		
Male	24	50.0
Female	24	50.0
Class		
JSS1	12	25.0
JSS2	5	10.4
JSS3	13	27.1
SSS1	9	18.8
SSS2	6	12.5
SSS3	3	6.3
Parents Marital Status		
Married	41	85.4
Divorce	2	4.2
Single	2	4.2
Widow(er)	3	6.3
Family Type		
Polygamous	3	6.3
Monogamous	45	93.8
Religion		
Islam	2	4.2
Christianity	46	95.8
Age	Mean	Standard Deviation
	13.02	1.97

The participants' demographic composition reveals an equal 24 females and 24 males' distribution. In addition, 25% of the participants were enrolled Junior Secondary School (JSS) 1 class, while the enrolment distribution in the other classes was JSS2 (10.4%), JSS3 (27.1%), SSS1 (18.8%), SSS2 (12.5%), and SSS3 (6.3%) respectively. Regarding the family structure, the majority (85.4%) reported that their parents are married and living together, while 4.2%, 4.2%, and 6.3% stated that their parents are divorced, single, and widowed, respectively.

Furthermore, 6.3% of the participants were from the polygamous family type, and 93.8% from the monogamous family type. Concerning the participants' religious affiliation,



95.8% indicated to be Christians, and 4.2% as Muslims. The participants' age distribution reveals that highest numbers of the study participants were 11years old (22.9%), followed by those who are 13years (18.8%), 15years (16.7%), 12years (14.6%), 10years (6.3%), 16years (6.3%), 17years (2.1%) and 18years (2.1%) respectively.

The two stated hypotheses underwent analysis utilizing the Statistical Package for Social Sciences (SPSS) version 23. A pairwise sample t-test was employed for hypothesis testing, and the detailed results are presented in the tables below.

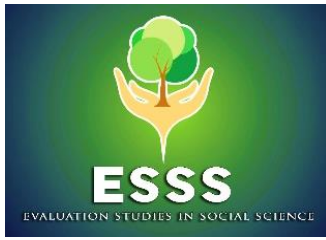
Table 3

Efficacy of Psychoeducation on Psychological Distress between Experimental and Control Groups using Pairwise Sample T-test

DV	Group	Treatment	Time	N	Mean	SD	df	t	p
Psychological Distress	Experimental	PsyEd	Pre-test	23	49.48	21.38	22	5.11	<.001
			Post-test	23	19.09	13.03			
	Control	No Treatment	Pre-test	20	51.70	18.32	19	0.43	>.05
			Post-test	20	48.35	30.61			

An assessment of the psychoeducation treatment intervention's effectiveness was carried out through a pairwise sample t-test, examining the mean differences at both the pre-test (prior to treatment exposure) and post-test (after exposure to treatment) for participants in the experimental group. Similarly, to validate that any observed treatment effect in mean differences was specifically linked to psychoeducation treatment exposure, a pairwise sample t-test was performed for the control group participants, as outlined in Table 2 above.

The findings outlined in Table 2 illustrate that psychoeducation, as a treatment condition, significantly lowered psychological distress symptoms among participants in the experimental group after six weeks of exposure ($t(22) = 5.11, p < 0.001$). This finding demonstrated a significant mean difference in psychological distress measures at the pre-test ($M = 49.48, SD = 21.38$) before psychoeducation treatment exposure and the post-test ($M = 19.09, SD = 13.03$) after exposure to the psychoeducation treatment intervention. Additionally, Table 2 indicates that participants in the control group, who did not receive any treatment intervention, did not show a significant mean difference in psychological distress measures ($t(19) = 0.43, p > 0.05$). Without any treatment exposure, the mean scores at the pre-test ($M = 51.70, SD = 18.32$) and post-test ($M = 48.35, SD = 30.61$) showed no significant difference. Thus, these findings suggest that psychoeducation treatment significantly contributed to the reduction of psychological distress symptoms among the participants. Furthermore, the decrease in psychological distress symptoms observed among experimental group participants can be attributed to the psychoeducation treatment exposure they received, while the reduction observed among the control group participants was insignificant. Hence, the hypothesis



asserting that participants in the experimental group, following psychoeducation, would report significantly lower psychological distress than those in the control group was confirmed.

Table 4

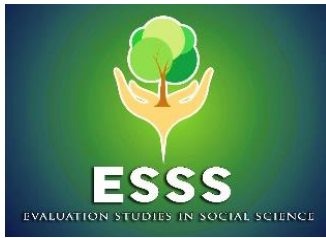
Mean Difference of Experimental group participants on Psychological Distress at 1month Follow-up compared to Pre-test and Post-test Measures using Pairwise Sample T-test

DV	Group	Time	N	Mean	SD	df	t	p
Psychological Distress	Experimental	Pre-test	20	46.80	19.31	19	7.12	<.001
		Post-test	20	18.70	13.89			
		Follow-up	20	20.70	13.90			
	Control	Pre-test	16	52.13	19.23	15	1.85	<.05
		Post-test	16	55.31	28.87			
		Follow-up	16	44.00	12.67			

A pairwise sample t-test conducted revealed that the psychoeducation treatment intervention remained significantly effective in reducing elevated psychological distress symptoms among the experimental group participants during a one-month follow-up period ($t(19) = 7.12, p < 0.001$). Similarly, the effectiveness of psychoeducation as a mono-therapy in reducing psychological distress was sustained after the one-month follow-up, as evidenced by the lack of significant reduction in psychological distress among control group participants who received no treatment ($t(15) = 1.85, p < 0.05$). Furthermore, the analysis of the mean differences between the pre-test ($M = 46.80, SD = 19.31$) and follow-up ($M = 20.70, SD = 13.90$) revealed that participants in the intervention group who received psychoeducation, consistently demonstrated lower levels of psychological distress symptoms. Conversely, among control group participants, psychological distress symptoms remained high at the post-intervention measure ($M = 44.0, SD = 12.67$) compared to the pre-test ($M = 52.13, SD = 19.23$).

DISCUSSION AND IMPLICATIONS

This research examined the effectiveness of psychoeducation as an independent treatment intervention for psychological distress, encompassing depression, anxiety, and stress among adolescents in secondary schools with elevated psychological distress symptoms. The criteria for participant inclusion considered the mean score of 30.62. Two hypotheses were stated and tested using pairwise sample t-tests. By adopting the bio-psychosocial model of mental illness to impart knowledge of psychological distress, the study discovered that exposing psychologically distressed adolescents to the understanding of what psychological distress entails — encompassing symptoms, causes (biological, psychological, and social), and available treatment types — led to a notable reduction in distress symptoms. This reduction was evident when comparing the pre-test and post-test mean scores of the treatment group participants after the six-week exposure. In addition, upon comparing the pre-test and post-test



mean scores of the control group participants after six weeks without any form of treatment exposure, there was no significant reduction observed in the measure of psychological distress between the pre-test and post-test scores.

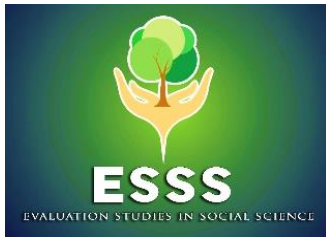
The results of this study align with the prior findings of Bisji et al. (2019), demonstrating that providing individuals with knowledge can significantly enhance their psychological well-being within 4 weeks, as evident in the reduction of depressive symptoms. Likewise, Papini et al. (2023) found that 6weeks psychoeducation intervention remained effective at reducing elevated anxiety symptoms after two weeks follow-up. However, the outcomes of this study diverge from the findings of Jibunoh and Ani (2022), which suggested that psychoeducation was ineffective after 3 weeks of exposure, as indicated by the non-significant reduction in the participants' anxiety symptoms. Also, the results of this study align with the outcomes and recommendations of earlier studies, indicating that psychoeducation can be effective in alleviating psychological distress (Bevan Jones et al., 2018; Donker et al., 2009; Eze et al., 2023; Jorm et al., 2000; Lukens & McFarlane, 2004; Muriungi & Ndeti, 2013; Olashore et al., 2023; Papini et al., 2023).

Furthermore, the findings of this study have shown that psychoeducation can serve as a standalone treatment intervention to address the increasing prevalence of psychological distress symptoms among low-income countries (Shorey et al., 2022), where there is limitedness in professionals that can administer cognitive behaviour therapy (WHO, 2020), as observed in the one-month follow-up sustained treatment effect in the experimental group participants. Also, the post-treatment intervention follow-up measure reveals that psychological distress symptoms remained significantly lower. However, among the control group participants' psychological distress symptoms measure shows that distressed symptoms remained high among the participants.

Consequently, the study's results indicate that psychoeducation can function as a viable evidence-based psychological treatment intervention for adolescents experiencing psychological distress, especially in situations where they are overlooked or undertreated due to the absence of trained experts capable of administering cognitive-behavioural therapy, as proposed by researchers in various studies (Creswell et al., 2020; Donker et al., 2009; WHO, 2020).

CONCLUSION

Considering the findings of this study, psychoeducation has further received data evidence as an effective standalone treatment that may be used among psychological distress adolescents in reducing significantly psychological distress symptoms and prevalence among adolescents attending school. However, the high incidence of psychological distress among adolescents particularly in low-income countries like Nigeria where 3 out of 10 adolescents suffer from psychological distress has been linked to a lack of experts availability, poor data, and access to evidence-based treatment accessibility which gives strength to the findings of this study on the psychoeducation efficacy.

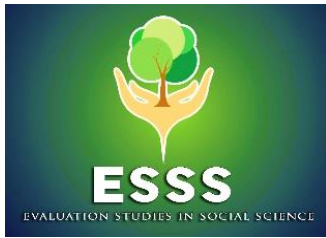


Therefore, where there is a sparseness of experts that can administer cognitive behaviour therapy, the impartation of knowledge on mental health conditions such as their symptoms, the causal factors, and the treatment options availability would help mitigate the distress symptoms and prevalence among adolescents especially in-school adolescents between the ages of 10-18 across the secondary school classes. That is, the core of this treatment intervention teaches the experimental group participants about what psychological distress is, the forms of the occurrence of its symptoms often experienced, the predisposing, precipitating, perpetuating, and protecting roles of biological, psychological, and social factors, within the bio-psychosocial model, resulted in the significant reduction of elevated psychological distress symptoms being experienced by the participants compared to the control group participants over six weeks and four weeks post-intervention follow-up period.

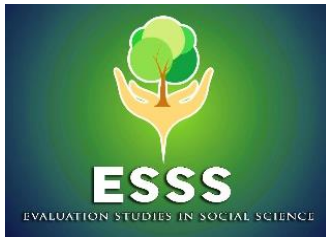
Furthermore, given the findings of previous studies which show that psychoeducation often serves as an adjunct treatment rather than a standalone therapy, the strength of this study therefore lies in focus shifting on psychoeducation from adjunct therapy to being effective mono-therapy. In addition, what appears to be researchers' advocacy for the use of psychoeducation as an alternative treatment intervention where an obvious lack of mental health professionals exists and lacks in adequate clinical control trials studies with a control group have received data credence given this study findings. Consequently, clinicians as well as non-clinicians working in schools can significantly consider psychoeducation as a standalone therapy option capable of reducing symptoms of psychological distress, including depression, anxiety, and stress among adolescents.

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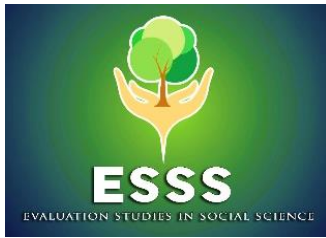
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