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EFFECT OF COGNITIVE PROCESSING THERAPY ON SELF-STIGMA AND QUALITY OF LIFE OF PERSONS NEWLY DIAGNOSED OF HIV IN OYO STATE, NIGERIA

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ABSTRACT: HIV/AIDS-related stigma decreases quality of life (QOL) in Persons Living With HIV and AIDS. This study was designed to examine the effects of Cognitive Processing Therapy (CPT) on self-stigma and QOL among persons newly diagnosed of HIV in Oyo State, Nigeria. Pretest-posttest control group quasi-experimental design with 2x5x3 factorial matrix was adopted. Forty-nine persons (male=17; female=32) newly diagnosed of HIV with age range of 20-45 years were purposively drawn from Antiretroviral therapy (ART) centres in three hospitals in Oyo State, Nigeria. The three sites were randomly assigned experimental and control groups. The instruments used were HIV Stigma ($r = 0.78$), Stigma-9 Questionnaire ($r = 0.93$), and Rosenberg Self-esteem scale ($r = 0.83$). Analysis of covariance was used to analyse data at 0.05 level of significant. Result show that there was a significant main effect of treatment on self-stigma ($F_{(2; 33)} = 711.64$; partial $\eta^2 = 0.98$). The persons newly diagnosed of HIV in the CPT ($\bar{x} = 60.57$) benefitted more than their counterpart in the control group ($\bar{x} = 111.47$). There was significant main effect of age on self-stigma ($F_{(2; 33)} = 6.53$; partial $\eta^2 = 0.30$). The participants in the age range of 30-34 benefitted more ($\bar{x} = 73.08$) than their counterparts in the other age ranges. There was also a main effect of self-esteem on self-stigma ($F_{(2; 33)} = 13.08$; partial $\eta^2 = 0.46$). The participants with high self-esteem benefitted more than their counterpart with low and moderate self-esteem ($\bar{x} = 82.86$). CPT is an effective therapy for decreasing self-stigma among PLHIV.

Keywords: People living with HIV, HIV self-stigma, quality of life, Cognitive processing therapy, self-esteem

INTRODUCTION

The stigma associated with Human Immunodeficiency Virus (HIV) is a significant global public health concern. Most people living with or affected by HIV/AIDS in Nigeria have suffered one form of stigma or discrimination at either the community level, workplace, place of worship etc. There is no gain-saying that stigma and discrimination is the biggest battle people living or affected by HIV/AIDS fight (Adekoya, et al. 2024). People living with Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) (PLHIV) do not only face medical problems, they also face social problems associated with being infected with HIV. On one hand, the individual struggles with the symptoms that result from the virus and on the other, the same person is challenged by the stereotypes and prejudice that result from misconceptions about HIV and AIDS. As a result of both, people living with HIV are robbed of the opportunities that define a quality life such as good jobs, safe housing, satisfactory health care, and affiliation with a diverse group of people (Ofole, 2014).

According to Joint United Nations Programme on HIV/AIDS (UNAIDS) (2024) report, as at 2023 there were 39.9 million people across the globe with HIV, of these, 38.6 million were adults (>15 years old), and 1.4 million were children (<15 years old) while 53% of them were women and girls. It was also documented that around 630,000 people died from AIDS-related illnesses worldwide in 2023. HIV is still a major public health challenge in Nigeria as the country currently ranks fourth in the world with regards

to HIV burden. The country has an estimated 1.8 million people living with HIV (PLHIV) (UNAIDS, 2024) and an estimated 107,112 new HIV infections which is about 38% of new infections in West and Central African region. The Nigerian HIV prevalence rate is declining however, stigma indices does not show corresponding decline. Stigma and discrimination have become major stumbling blocks to HIV and AIDS mitigation programs as they discourage people from using HIV Testing Services (HTS) and keep those living with HIV from accessing ART. A recent study conducted by Adekoya et al. (2024) in Nigeria show that People living with HIV often experience stigma, hostility, denial of gainful employment, forced resignation or retirement, reception of poor quality treatment and segregation in hospital wards. The study further revealed that of the 215 respondents drawn from PLHIV in Akwa Ibom State, Nigeria, 50.4% had been denied access to health care services, because of their HIV status. Respondents also reported being afraid of: gossip (78%), being verbally abused (17%), or being physically harassed or assaulted because of their positive status (13%). Self-stigmatization was also evident; respondents reported being ashamed because of their positive HIV status (29%), exhibiting self-guilt (16%), having low self-esteem (38%), and experiencing self-isolation (36%). It was surprising that this level of stigma and discrimination still exist in Nigeria despite several actions taken to mitigate stigma and discrimination in the past.

HIV stigma is defined as negative attitudes, beliefs, and behaviours towards people living with or at risk of HIV (Restall, et al. 2023). It can also include the discrimination that results from these attitudes and beliefs. Attitudes toward the devalued attribute is often manifested as prejudice, stereotyping, and discrimination against PLHIV within families, communities and healthcare facilities (Restall, et al. 2023). Restall, et al. (2023) described self-stigma as a multi-faceted construct that can impact the degree to which people living with HIV choose to make their status known given the negative social consequences of such disclosure. Sometimes such stigmatisation of PLHIV is reflected in the derogatory description ascribed to this group in many countries. For instance, in many communities in Nigeria, living with HIV is synonymous with receiving a death sentence. For example, the Igbos in eastern Nigeria calls HIV *obiri na aja ocha*, a disease that ends in the grave (Maduiké & Care, 2010). While the Yoruba in southwestern Nigeria describe HIV as a sexually transmitted infection (STIs) that is why it is referred to as “akoatosi” (virulent gonorrhea) in Yoruba language. This is as a result of the wrong assumption that HIV is transmitted only through sexual intercourse thus, PLHIV are seen as sexually immoral individuals. Consequently, the PLHIV cannot disclose their status or even seek treatment because the person would be ridiculed as someone who is sexually immoral.

Earnshaw et al. (2009) opined that being newly diagnosed of HIV result to three primary stigma mechanisms, namely; enacted, felt (or anticipated, perceived), and internalized stigma. *Enacted stigma* refers to experiences of prejudice or discrimination by an individual because of his/her HIV status; *Felt (or anticipated, perceived) stigma* refers to the expectation of experiencing stigmatisation because of HIV, and is often influenced by the perception of attitudes that others have towards PLHIV; and *Internalised stigma* refers to the endorsement of negative beliefs and feelings about oneself because of one's HIV-positive status. Steward et al. (2008) further introduced *Vicarious stigma* as a fourth stigma mechanism. It is defined as hearing or otherwise learning about prejudice or discrimination towards other people with HIV. For PLHIV, the combination of vicarious stigma and one's own experiences leads to *felt stigma*. It is well documented that health care providers, family, friends, or others in the community can serve as the sources of stigma (Steward et al. 2008; Rutledge, et al. 2011). Systematic reviews have highlighted previous attempts to reduce stigma and its impacts, primarily through education, skill building, and support (Dunbar. et al. 2020; Feyissa et al. 2019). Moreover, some stigma reduction strategies have demonstrated success, though the evidence is not robust. This could be because previous interventions failed to modify the pathological fear

structures that maintain self-stigma. As a result of this gap, this study was designed to examine the effects of cognitive processing therapy on reduction of self-stigma among persons newly diagnosed of HIV in Oyo State, Nigeria.

Previous studies show that Cognitive Processing Therapy (CPT) is an effective treatment for post-traumatic stress disorder (PTSD) (Nishith et al. 2024; LoSavio et al. 2022). This suggests that CPT can be effective for self-stigma because both PTSD and self-stigma are associated with higher levels of anxiety, depression, and traumatic stress symptoms. Cognitive processing therapy (CPT) is a manualised therapy originally developed to help clients recover from posttraumatic stress disorder and related conditions (D’Zurilla & Nezu, 2007). The assumption behind CPT is that individual’s beliefs about the causes and consequences of traumatic events produce strong negative emotions, which prevent accurate processing of the traumatic memory and the emotions resulting from the events (Young, et al. 2003). CPT incorporates trauma-specific cognitive techniques to help individuals with stigma more accurately appraise these “stuck points” and progress towards recovery. This suggest that persons newly diagnosed with HIV will benefit from exposure to CPT because this therapy helps people challenge and change negative thought patterns and develop coping strategies which can promote recovery from shock of being disagnosed with HIV. This therapy also directly modify maladaptive cognitions that have developed due to HIV diagnosis. These maladaptive cognitions includes erroneous interpretations of the event (e.g., self-blame) or distorted views of the self or world (e.g., “nobody can be trusted”). By repeatedly challenging the maladaptive cognitions through the use of cognitive processing techniques, individuals are able to develop more balanced and healthy appraisals of being HIV positive, themselves, and the world. Thus, the restoration of adaptive appraisals promotes recovery of self esteem.

There is evidence that age could moderate treatment of stigma (Emlet, 2006; Moore, 2012), however, it is unclear whether HIV in older age is considered more or less stigmatizing than in younger age or whether older adults with HIV are more or less able to resist and challenge stigma than their younger counterparts (Emlet, et al. 2015). Nevertheless, it is widely anticipated that HIV-related stigma is produced about, and experienced by, older and younger people. Limited evidence available from sub-Saharan Africa confirms that some older adults with HIV anticipate both HIV- and age-related stigma. Fear of gossip, stigma and discrimination prevented more than a third of old people from disclosing their HIV serostatus (Moore, 2012). Kuteesa (2014) show that older adults’ experience higher HIV related stigma due to higher level of depenecy for physical and financial supports. Further, HIV-related stigma has been reported to induce maladaptive responses in young adults, such as sex and substance abuse (Swendeman, et al., 2016).

Literature suggests that self-esteem can moderate treatment outcomes for CPT among PLHIV. Self-esteem is confidence in one’s own worth, abilities, or morals. The construct of self-esteem has been shown to be a desirable one that is associated with a variety of positive outcomes, such as academic achievement, relationship satisfaction, happiness and lower rates of criminal behaviour (Hewitt et al. 2008). Recent evidence suggest that perceived and enacted stigma were negatively correlated with high self-esteem and stigma can contribute to low self-esteem (Kohli, et al. 2023) howerevr, the mechnaism that explains the relationship iy yet to be fully understood.

PURPOSE OF THE STUDY

This study was designed to broadly examine the effectiveness of cognitive processing therapy on reduction of self-stigma and quality of life among persons newly diagnosed HIV in Oyo State, Nigeria. Specifically, this study examined the;

- i. The significant main effect of cognitive processing therapy on reduction of self-stigma among

- persons newly diagnosed of HIV in Oyo State, Nigeria.
- ii. The significant main effect of age on reduction of self-stigma among persons newly diagnosed HIV in Oyo State, Nigeria.
 - iii. The significant main effect of self-esteem on reduction of self-stigma among persons newly diagnosed of HIV in Oyo State, Nigeria

HYPOTHESES

Three null hypotheses were tested at 0.05 level of significant.

Ho₁: There is no significant main effect of cognitive processing therapy on reduction of self-stigma among persons newly diagnosed of HIV in Oyo State, Nigeria.

Ho₂: There is no significant main effect of age in the reduction of self-stigma among persons newly diagnosed of HIV in Oyo State, Nigeria.

Ho₃: There is no significant main effect of self-esteem in the reduction of self-stigma among persons newly diagnosed of HIV in Oyo State, Nigeria.

METHODS AND MATERIALS

DESIGN

Pretest-posttest, control group quasi experimental design was adopted to execute the study. The column consist of the treatment (Cognitive Processing Therapy (A1) and a control group (A2), while the row was webbed with two moderating variables, namely; self-esteem at two levels (high, and low) and age range at 5 levels.

Table 1: Schematic representation of treatment conditions

0 ₁	XA ₁	0 ₄
0 ₂		0 ₅

Where 0₁, and 0₂ are pre-tests

0₄, and 0₅ are post-tests

XA₁ = Treatment with Cognitive Processing Therapy

0₂= Control group

ETHICAL CLEARANCE

The reseachers obtained ethnical approval from University of Ibadan Social Science and Human Research Ethics Committee (UI/SSHREC) with registration number; UI/2017/0017. In addition, to enable the researchers have access to ART centres in Oyo State, approval was also obtained from the Oyo State Ministry of Health (AD/13/479/1096). To ensure the principle of voluntariness, only participants who volunteered to participate were recruited. The volunteers were fully informed of the research purpose and the activities which have no health harm. Only those who signed informed consent form participated in the study and they were told they have the right to *opt out* at at any stage if they feel that their rights were violated. The participants were also not exploited but were given transport fares and modest meals during sessions. In order to guarantee anonymity of each participant, their names and other identity information were not included in the questionnaires but codes were used to collect data. To ensure that the principles of

accountability and transparency was observed, the research was conducted in a fair, honest, impartial and transparent manner using only PLWHIV who have done full disclosure.

PARTICIPANTS

Forty-nine PLHIV(male=17 female=32) with age range of 20 to 45 years and mean age 29 years who met the inclusion criteria were purposively drawn from three ARV centres located in Oyo State, Nigeria. The following criteria were used in selecting the participants for the study: (1) being newly diagnosed of HIV (seropositive confirmation not more than one year) (2) attendance of ART Centres located in Oyo State (3) being 20 years and above (4) not bed ridden but with stable state of health and (5), scored 34 and above in the screening questionnaire and (6) signed and returned consent form.

MEASURES

HIV felt-stigma scale by Jimenez et al. (2010) was adopted to screen PLHIV for self-stigma. It was a 17-item self report questionnaire. The instrument measured four dimensions of stigma, namely; personalised stigma, disclosure concerns, negative self-image, and concern with public attitudes. The personalised stigma dimension has five items and addresses the perceived consequences of other people knowing that one has HIV. The disclosure sub section has four items relating to withholding information, keeping one's HIV status secret, or worrying about others knowing one's HIV status. The negative self-image dimension was a five-item dimension related to the respondent's feelings of being unclean, inferior, or immoral as a result of having HIV. The concern with public attitudes dimension has three items referring to other people's attitudes or the consequences of others knowing one's HIV-positive status. Sample items include; *"I feel guilty because I have HIV"*; *"People with HIV are treated like a public nuisance"*; *"I feel the need to hide my HIV + status"*. All items were anchored on a modified 4-point Likert scale ranging from strongly agreed (4), agreed (3), disagreed (2) and strongly disagreed (1). The items of the questionnaire were negatively worded, the higher the scores, the more the likelihood of having HIV self-stigma. The highest obtainable score was 68 while lowest obtainable score was 17. Those who scored from 34 and above met a criterion of selection for the study, because they reached the threshold of having HIV self-stigma. To ensure that the instrument was culturally relevant, it was pilot tested on randomly selected PLHIV in Osun State (a neighbouring State to Oyo). The test- retest reliability index after one week interval was $r = 0.78$.

Stigma-9 Questionnaire (STIG-9) by Gierk et al. (2018) was a self-report questionnaire utilised to measure perceived health stigma. It assessed the extent to which respondents expect negative societal beliefs, feelings, and behaviours towards people who are supposed to have a health challenge. It was used to measure self-stigma at pre and post intervention to compare the differences.. The STIG-9 consists of nine items assessing cognitive, behavioural and affective aspects of perceived health-related stigma. The nine items were anchored on a four-point Likert scale. Respondents indicated the degree to which they expect negative societal beliefs, feelings, and behavior towards someone who has health challenge. Response categories were: disagree [0], somewhat disagree [1], somewhat agree [2] agree [3]. The psychometric properties of the instrument were analyzed in a study conducted at the Hamburg-Eppendorf University Medical Center in Germany by Gierk, et al. (2018). They found excellent high internal consistency, and evidence for validity. To further re-establish the psychometric property of the scale in relation to the Nigerian culture and language usage in the scale, the researchers revalidated the instrument using volunteers from Osun State. The result was analysed with Pearson Product Moment Correlation. It revealed high reliability index of $r = 0.93$ which suggests that the questionnaire was reliable.

Rosenberg Self-Esteem Scale (RSES) developed by Rosenberg (1963) was used to classify the participants into three types of self esteem, (high, moderate, low) . The original RSES has 63 items with 12 subscales. In this study, one of the subscales relevant for the purpose was adopted. The scale measures global self-worth by measuring both positive and negative feelings about the self. Sample items of the scale are; *"I feel that I am a person of worth, at least on an equal plane with others"*. *"On the whole, I am satisfied with myself"*. *"I certainly feel useless at times"* All items were answered using a 4- point Likert type scale format ranging from strongly agree to strongly disagree. Scoring: Items 2, 5, 6, 8, and 9 are reverse scored. This scale has been widely used by Nigerian researchers who reported high reliability index For example, Uba and Oluwatelure (2016) used CPT to examine self-esteem and they obtained $r=0.92$ showing that the instrument has a good internal consistency. In the present study, test retest was used to revalidate the instrument . The data obtained was analysed with PPMC. The reliability index obtained was $r=0.83$ which suggests that the instrument is reliable to be used for data collection.

PROCEDURE FOR DATA COLLECTION

The study was carried out in 3 systematic phases namely, pretreatment, treatment and follow up. At the pretreatment phase, approval was obtained from the Oyo State Ministry of Health as well as from the University of Ibadan Social Science and Human Research Ethics Committee (UI/SSHREC). Thereafter, the researchers pilot tested the instruments on randomly selected PLHIV in Osun State (not the state of intervention) to ensure the feasibility of the study. Three research assistants who could speak two other Nigerian languages (Igbo and Hausa) were trained to support in collection and other logistics.

At the treatment phase, participants who met the inclusion criteria were informed about the purpose of the study and they were assured of confidentiality and right to *opt out* at any phase of the study if they were not satisfied with the activities. The centres selected for the study were thereafter randomly assigned into treatment conditions (Cognitive Processing Therapy and Control Group). Baseline data was collected from both groups. The experimental group was exposed to cognitive processing therapy using the The PLHIV clinic days as approved by the ARV centres. The treatments was held for ten weeks. Each session lasted for $1\frac{1}{2}$ hours. The goal of treatment was to help the participants to identify and address errors or *stuck points* in their lives by sensitising them to gather evidence for and against those thoughts. Such stuck points and errors in thinking, included thoughts like *"HIV positive serves me right"* or *"I did something to deserve being HIV positive"* . In the first session the participants were taught about effects of stigma and consequences of internalising self-stigma. They were empowered with the skill of how to recognize and label automatic thoughts or other thoughts that may be contributing to self- stigma. In the second session, the participants beliefs and feelings were challenged and changed by asking them to break a pattern of avoiding feelings and thoughts associated with the stigma.

During this phase, questioning, role plays and video shows were used They were supported to identify unhelpful or maladapted thoughts and feelings associated with the HIV/self-stigma. In the third-fifth sessions the participants learnt new skills of negotiating, communicating, and resolving conflicts. In order to actively engage the participants, they used group work and role played different scenarios. The sixth-seventh sessions were used to improve the participants assertiveness skill. The essence of this sessions were to relieve them of self-stigma and replace it with a more matured and responsible adult behaviours. The eight and ninth sessions were on improving the participants self-esteem by encouraging them to avoid 'should' and 'must' statements instead they should focus on the positive aspects of their lives. In the final session, all the sessions were summarised by volunteers. The researchers explained to them how to retain treatment gains. The participants were thereafter, appreciated and therapy was terminated. The control group was not

treated but baseline and post intervention data was collected from them. In order to compensate them for their time, they were given a lecture on domestic safety.

RESULTS

Demographic profile of Participants

Table 1 was used to present the respondents demographic profile.

Table 1 : Distribution of the respondents by Socio-Demographic Profile

Variable	Categories	Frequency	Percentage%
Gender	Male	17	32.69
	Female	32	65.30
	Total	49	100.0
Age	20-24	06	12.25
	25-29	09	18.37
	30-34	16	32.65
	35-39	11	22.45
	40 and above	07	14.29
	Total	49	100.0
Marital Status	Single	2	4.10
	Married	10	20.40
	Separated	20	40.80
	Widow	11	22.45
	Widower	06	12.25
	Total	49	100.00
Religion	Christianity	18	36.70
	Islam	30	61.20
	Traditional	1	2.10
	Others	0	0.00
	Total	49	100.0
Educational Qualification	Primary Education	28	55.10
	Secondary Education	19	38.80
	Higher Education	2	4.10

The result presented in Table 4.1 revealed that out of the forty-nine participants that took part in the study, there were three males 17 representing 32.69% of the study sample while thirty-two were females' 32 (65.30%) . It revealed that out of the forty-nine participants in the study, (20–24) years of age accounted for 6 (12.25%); 09 (18.37%) fall within the ages of (25-29) years old while 16 (32.65%) were (30-34) years old. Others participants between the ages of (35-39), and were 11(22.45%). The results revealed that out of forty nine participants in the study 2 (4.1%) were single; 10(20.4%) were married; 20 (40.8%) participants were separated. Those that were widow 11(22.45%) and Widower, 6(12.25%). The results of analysed data shows that out of forty nine newly diagnosed HIV individuals that participated in the study, eighteen 18 (36.7%) were Christian; thirty 30(61.2%) were Muslim and one 1(2.0%) was a traditionalist. With regards to educational status, 28 representing 55.10% of the sample had primary education while those with secondary and higher education were 19 (38,80%) and 2 (4.10%) respectively. The implication of this demographic profile is that anyone can be diagnosed of HIV irrespective of gender, age, marital or educational status

Ho₁: Hypothesis one predicted no significant main effect of cognitive processing therapy on reduction of self-stigma among persons newly diagnosed of HIV in Oyo State, Nigeria Analysis of Covariance (ANCOVA) was used to test this hypothesis. The result is presented in Table 2.

Table 2: Analysis of Covariance (ANCOVA) of pre-test and post-test on effects of treatment on self-stigma of participants in the three groups, (treatment, age and self-esteem)

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	21688.626 ^a	8	2711.078	240.519	.000	.992
Intercept	580.656	1	580.656	109.468	.000	.779
Covariate	307.577	1	307.577	57.986	.000	.652
Treatment group	7549.640	2	3774.820	711.644	.000	.979
Treatment x Age	69.259	2	34.629	6.528	.004	.296
Treatment x Self esteem	138.730	2	69.365	13.077	.000	.458
Error	164.435	33	5.304			
Total	420916.000	49				
Corrected Total	21853.061	48				

a. R Squared = .992 (Adjusted R Squared = .988)

The results displayed in Table 2 showed a significant main effect of treatment in the reduction of self-stigma among persons newly diagnose of HIV ($F_{2,33} = 711.644$; $P < 0.05$, $\eta^2 = 0.98$). This means that there was significant difference in the mean score of self-stigma among PLHIV that were in cognitive processing therapy group and those in the control group. Hence hypothesis one was rejected. Moreover, to ascertain the direction of the differences and determine the magnitude of the mean scores of the participants in the treatment and the control group, Sheffe post-hoc analysis was used. The result is displayed in Table 3.

Table 3: Sheffe post-test analysis on stigma between the treatment and Control Group

Trtgrp	N	Subset for alpha = 0.05	
		1	2
Cognitive Processing Therapy (CPT)	28	60.5714	
Control	21		111.4737
Sig.		1.000	1.000

The result in Table 3 revealed that control group obtained the highest adjusted post-test mean score on self-stigma ($\bar{x} = 111.4737$, $SD = 0.71$) while the CPC group had lower means score ($\bar{x} = 60.5714$, $SD = 0.91$). The implication of this was that the Cognitive processing therapy was effective in the reduction of self-stigma of participants exposed to cognitive processing therapy unlike their counterpart in the control group.

Ho₂: The second hypothesis predicted no significant main effect of age in the reduction of self-stigma among persons newly diagnosed of HIV. The result is presented in Table 1 (ANCOVA Table). The Table shows a significant effect of age on self-stigma among persons newly diagnosed of HIV ($F_{2,33} = 6.528$; $P < 0.050$, $\eta^2 = 0.30$). Hence hypothesis two was statistically rejected. To identify the direction of the differences, sheffe post hoc test was utilised as shown on Table 4.

Table 4: Sheffe Post-test on age effect age in reduction of self-stigma among persons newly diagnosed of HIV with Age range

Age (Year)	N	Subset for alpha = 0.05				
		1	2	3	4	5
20-24	6	63.0769				
25-29	9		61.3210			
30-34	16			56.8908		
35-39	11				87.3856	
40 and above Sig.	7					98.5556
		1.000	1.000	1.000	1.000	1.000

ANCOVA Table showed there was significant effect of age on self-stigma among persons newly diagnosed of HIV ($F_{2,33} = 6.528$; $P < 0.050$, $\eta^2 = 0.30$). Hence the null hypothesis was statistically rejected. The implications was that treatment gains were different on the basis of participants age range. Table 4 showed that participants between ages (30-34) benefited optimally from the thrapy ($\bar{x} = 56.89$). Ages range of 20-30 and 35 -39 years also benefitted ($\bar{x} = 61.32$); ($\bar{x} = 87.3856$) respectively. There is evidence to suggest that participants between ages 40 and above who participated in the study benefited less from the treatment ($\bar{x} = 98.56$).

H0₃: The third hypothesis predicted no significant main effect of self-esteem on reduction of self-stigma among persons newly diagnosed of HIV in Oyo State, Nigeria. The result of ANCOVA presented on Table 1 revealed there was significant main effect of self-esteem on self-stigma among persons newly diagnosed of HIV ($F_{2,33} = 13.077$; $P < 0.05$, $\eta^2 = 0.46$). Hence hypothesis three was rejected. To ascertain the direction of the differences, Scheffe post hoc test was utilised as presented on Table 4.

Table 4: Scheffe post-test of self-esteem on self-stigma among persons newly diagnosed of HIV with self-esteem

Self-Esteem	N	Subset for alpha = 0.05	
		1	2
High Self-Esteem	14	82.8571	
Moderate Self-Esteem	23		92.9130
Low Self-Esteem	12		93.7500
Sig.		1.000	.378

Result in Table 4 revealed that self-esteem of participants have impact on the treatment gains. It showed that partciapnts with high, moderate and those with low self-esteem differ significantly in the treatment outcomes. Further, Table 4 shows that participants with high self-esteem participants benefited optimally from the treatment ($\bar{x} = 82.857$), followed by the moderate and low self-esteem participants with ($\bar{x} = 92.91$ and 93.75) respectively.

DISCUSSION

The result obtained from the study suggests that there was significant main effect of cognitive processing therapy in reducing self-stigma among persons newly diagnosed of HIV. This implies that those exposed to therapy are less likely to have self-stigma when compared to their counterpart in the control group. The possible reason for this finding could be as a result of the fact that CPT is a therapy that is well documented to have the capacity to assist individuals organise information into schemas (categories of information) to make sense of the world, interpret new information, and exert some level of prediction and control

over their experiences. This is because self-stigma could disrupt schemas, particularly around beliefs related to safety, trust, power, esteem, and intimacy. These disruptions manifest in inaccurate self-statements, called “stuck points,” that interrupt normal recovery from the self-stigma experience. Moreover, CPT has a reported efficacy when administered in group as was done in this study. This outcome corroborates that of LoSavio and colleagues (2022) who reported that CPT can be effective for many different types of problems with a diverse clients, providing them relief from symptoms experienced. CPT was also reported to outperformed inactive control conditions on PTSD outcome measures at posttreatment. They reported that CPT-treated participant fared better than 89% of those in inactive control conditions at posttreatment and 82% at follow-up. The outcome corroborated the recent finding of Nishith et al. (2024) who found statistical significant changes in clients treated with CPT when compared with their untreated counterpart.

The second finding of the study was that there was significant main effect of age in the treatment outcome. The implication was that treatment gains were different on the basis of age range of participants. There was evidence to suggest that participants between ages (30-34) benefited more than other groups. While the older group (40 and above) gained less in the therapy. This outcome corroborates that of Hou et al (2020) who reported age differences in treatment outcomes. However, unlike, Hou et al. (2020) study which compared treatment outcome using only women, the present study utilised both male and female participants. There is also evidence to support that elderly patients might have poor prognosis or similar treatment gains, when compared with younger patients (Eggemann, et al. 2019). Age was thus seen to have the likelihood of contributing to adverse effect on the prognosis of elderly patients (Eggemann, et al. 2019).

The third outcome that emanated from this study showed that there was significant main effect of self-esteem in reducing self-stigma among newly diagnosed HIV individuals in Oyo State. There was evidence that participants with high self-esteem benefited more than their counterpart with low and moderate self-esteem. The implication is that people's type of self-esteem will affect their gains from therapy. This outcome of this study corroborated with multiple studies which reported positive relationship between self-esteem and HIV stigma. Interventions (Wang et al. 2018; Rossi et al. 2020.). The scholars found that higher self-esteem has the capacity to assist people with HIV (PLHIV) cope with stress and trauma, which can reduce the likelihood of developing depression. This outcome is not surprising because stable self-esteem have the likelihood of supporting an individual in tackling life stress. People with greater self-esteem are reported to be more likely to be good problem solvers and have greater resilience when dealing with stressors (Wang et al. 2018). Self-esteem has also proven to buffer negative emotions at special times, e.g., coronavirus disease 2019 (COVID-19) and quarantine period in various populations (Rossi et al. 2020). This outcome is plausible because self-esteem is essential in maintaining hope for the future, good health, and quality of life in living with HIV/AIDS. Many people living with HIV have challenges with self-esteem, which can impact their self-care and eventually their success in achieving viral suppression. Low self-esteem have been documented to increase engagement in risk-taking behaviours (e.g., substance abuse and sexual risk; Trzesniewski et al., 2006). Higher levels of self-esteem have been related to lower levels of HIV-related stigma (Pantelic et al., 2015).

CONCLUSION

There is robust evidence that stigma negatively impacts both persons living with HIV. The outcome of the study showed that cognitive processing therapy was effective in reducing self-stigma which impacts on the quality of life persons newly diagnosed of HIV in Oyo State, Nigeria. It also revealed that both age and self-esteem have effect on the treatment and both are therefore, factors to consider when instituting CPT intervention.

RECOMMENDATIONS

On the basis of the outcome of this study, the following recommendations are made to improve the quality of life of PLHIV;

1. CPT should be incorporated into programs for training healthcare workers.
2. Counselling psychologist using CPT should consider the participants age and self-esteem in order to obtain a better outcome.
3. The Nigerian HIV/AIDS anti-discrimination Act of 2014 should be domesticated in all the States in Nigeria. At present, the law has been domesticated in 17 states across Nigeria. Penalties for violations of the law can include fines and/or imprisonment. This law makes it illegal to discriminate against people based on their HIV status in employment, education, health, and other settings. It also prohibits requiring an HIV test for employment or services. This states that Every individual, community, institution and employer shall take steps to protect the human rights of people living with or affected by HIV or AIDS by eliminating HIV-related discriminations in all settings, including employment, health and educational institutions, policies and practices.
4. National Workplace Policy on HIV and AIDS should be made to be effective. This policy aims to create a safe and healthy workplace by eliminating discrimination and stigmatization of workers based on their HIV status. It also promotes HIV testing and counseling, and provides access to information and commodities like condom

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