

Influence of Demographic Variables on the Effectiveness of Cognitive Restructuring Techniques on Depression among HIV/AIDS Infected Women in Kaduna State, Nigeria

Hadiza Mohammed Bello, Ph.D

*Department of Educational Psychology and Counselling
Federal College of Education, Zaria
Kaduna State, Nigeria
derohasmaj@gmail.com*



Abstract

The study, guided by three hypotheses, investigated the influence of demographic variables on the effectiveness of cognitive restructuring on depression among HIV/AIDS infected women in Kaduna state, Nigeria. Quasi-experimental research design was employed using pre-test and post-test design. Sample size comprises of sixty (60) women with HIV/AIDS, having moderate level of depression selected using Beck Depression Inventory. Hypotheses formulated for the study were statistically analysed using Analysis of Variance (ANOVA). Results of the data analysis for the study showed that marital status and level of income have no significant influence on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS women; while level of education has significant influence on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS women. It is therefore recommended that psychologists and counsellors should employ cognitive restructuring technique irrespective of female patients' marital status and level of income; but that psychologists and counsellors should consider educational level of patients in employing cognitive restructuring technique as it is found to be more effective for those with secondary school education.

Keywords: Cognitive, Restructuring, depression, HIV/AIDS, women

Introduction

Depression is quite common in the medically ill and may exceed that of the general population in those with active medical problems (Baba & Omotara, 2001). Estimates of the prevalence of major depressive disorders in people living with HIV/AIDS vary widely in the literature. With the evolution of HIV, researchers have been increasingly interested and concerned with how people living with HIV/AIDS have psychologically adjusted to this chronic health condition and what the rates of depression are in this population. Reported prevalence rates have ranged from 1.9% to 35% in clinical

samples and from 30% to 60% in community samples. The lifetime prevalence of depression in people living with HIV/AIDS has been estimated at 20% to 45% (Benedict, 2004). It is estimated that 60% of people living with HIV in Ontario, Canada, may suffer from depression (Aljassem, 2016). Many people infected with HIV are not depressed most of the time and their resilience is as noteworthy as their psychopathology (Rabkin, 2008). The signs and symptoms of depression are similar in HIV-positive and HIV-negative individuals, but HIV-positive individuals may more frequently have sleep and appetite disturbances (Shumba, 2013). Depression may also contribute to non-adherence of anti-retroviral therapy (Akincigil, 2011) although there is not yet evidence that treatment of depression improves medication adherence among people with self-reported or documented medication non-adherence.

There are possible confounding factors that complicate measuring depression in HIV-positive people. Many symptoms of HIV are similar to somatic symptoms of depression. For example, fatigue, diminished appetite and sleep, physical complaints and weight loss, which could inflate depression rates in symptomatic HIV-positive individuals and increase the vulnerability of many depression rating scales.

Depression can contribute to poor physical health and this creates the need to put in place psychological and counselling interventions to help women with problem cope with depression symptoms. This assertion is in line with the observation made by Benedict (2004) who studied the impact of HIV/AIDS on infected men and women in Kwara State of Nigeria and found that HIV/AIDS had more psychological effects on women with HIV/AIDS than their male counterparts. Consequently, “psychological support services should be made available to women with HIV/AIDS and that the available resources should not be used to subsidize HIV/AIDS treatment but should focus on the prevention of HIV/AIDS and psychological support.” Thus, there is an urgent need for psychological intervention using psychological treatment/counselling services to help women with HIV/AIDS problem deal with the distress relating to HIV/AIDS.

The effect of cognitive restructuring on depression may be related to the personal characteristics of women with HIV/AIDS and this therefore, requires investigation. Psychological intervention and counselling may be described as an interpersonal process based on theoretical framework and techniques in order to bring about change in participants in a skillful and systematic way. Psychological and counselling interventions in the context of HIV/AIDS involves educating participants about effective ways of reducing depression of HIV/AIDS women as well as information given. People wanted information for various reasons. These included wanting to understand more about their condition and treatment options, where to go for treatment, what they were putting their bodies through and what their chances of

success were. People gathered information from a variety of sources including clinics, support groups, books, leaflets, television and radio. Their information needs often changed as treatment progressed for example weighing up options when deciding whether to continue or stop treatment.

Psychological and counselling interventions are a potent approach for managing depression. In this study, cognitive restructuring and counselling techniques are the two treatment interventions that were used to investigate effectiveness of psychological and counselling services in assisting women with HIV/AIDS problem to manage depression.

Cognitive restructuring was originally developed by Ellis (1989). It is a psychotherapeutic process of learning to identify and dispute irrational or maladaptive thoughts. There are many methods used in cognitive restructuring, which usually involve identifying and labelling distorted thoughts, Socratic questioning, thought recording, identifying cognitive errors, examining the evidence (pro-con analysis or cost-benefit analysis), understanding idiosyncratic meaning/semantic techniques, reattribution, guided imagery and listing rational alternatives (Ellis, 1989).

The treatment strategy (cognitive restructuring) was adopted to be effective in assisting HIV/AIDS persons to acquire desirable skills in restructuring their negative thinking and also acquire social skills and experience reduction in depression. The treatment conditions were intended to be effective and superior conditions in assisting HIV/AIDS infected persons that participated in the study. Different psychological treatments such as skills training, role play, and problem solving etc combined with the treatment techniques were used to successfully reduce depression in HIV/AIDS infected persons by improving their cognitive thinking and social skills to be more positive in their thinking, interact more, better accepted, adjust to their situations and be happier and live a better life.

Aderanti and Hassan (2011) show that cognitive restructuring is effective on rebelliousness and also effective on the rebelliousness of inmates from all socio-economic backgrounds. They further found that the effectiveness of cognitive restructuring in treating depression is irrespective of marital status because cognitive factors play an important and well documented role in delinquent behaviour, since the way people think has a controlling effect on their actions.

Nwachukwu (2007) linked depressive symptoms as a measure of immune functioning, in a multi-centre AIDS cohort study of 330 gay and bisexual men with HIV. At baseline, 19.7% of the men were identified as depressed and 16.1% were identified as affectively depressed. For these groups, CD4 lymphocytes declined 38% and 34%

faster than non-depressed participants, respectively. However, in the analysis, early AIDS diagnosis and mortality appeared to be related to depression, differences were significant based on educational level.

Statement of the Problem

Depression is a huge problem for HIV/AIDS infected women in Kaduna State of Nigeria. Women infected with HIV/AIDS suffer emotional problems, when diagnosed with the disease, which include depression, rejection, loneliness, fear, to mention but a few. Depression may increase when financial support is not forthcoming from family members, friends and health workers. Consequently, some of the women may discontinue accessing care and even interact less, not because of diminished interest in a bit to cope with the disease, but because they feel psychologically unable to continue. In Nigeria, psychological treatment intervention is not a regular feature of medical practice. Medical doctors/personnel only offer bio-medical treatment to HIV/AIDS women, but their psychological/emotional needs are not addressed. This form of health care is not consistent with the World Health Organization's definition of health which states that health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1994). Therefore, the mental, psychological and social needs of infected women should be addressed in the health care system in the country. Moreover, there is lack of psychological treatment interventions for women experiencing depression due to HIV/AIDS in Kaduna State. Depression can affect the physical health and social relationships of infected women and this can put another burden on family members and even the health care system.

From preliminary investigation in some Health Care Centres offering treatment and care for HIV/AIDS infected women, through personal observation and interview, most women were seen wearing gloomy faces and looking sad and restless because of their negative thoughts and feelings towards their situation and most women usually come to the hospital alone without their spouses or children accompanying them which shows the lack of social support to the victims and this may be as a result of the fact that they want to avoid the stigma associated with the HIV/AIDS pandemic in the society. Another problem of the respondents is the attitudes of the medical personnel to the health condition of women living with HIV/AIDS. In view of the foregoing, this study investigated the influence of demographic variables on the effectiveness of cognitive restructuring in managing depression among HIV/AIDS infected women in Kaduna State.

Objectives of the study

- i. To examine the influence of marital status on the effectiveness of cognitive restructuring technique on depression among HIV/AIDS infected women.
- ii. To examine the influence of educational level on the effectiveness of cognitive restructuring technique on depression among HIV/AIDS infected women.
- iii. To examine the influence of level of income on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS infected women.

Research Questions

- i. Does marital status of HIV/AIDS infected women have any influence on the effectiveness of cognitive restructuring technique in reducing depression?
- ii. Does educational level of HIV/AIDS infected women have any influence on the effectiveness of cognitive restructuring technique in reducing depression?
- iii. Does level of income of HIV/AIDS infected women have any influence on the effectiveness of cognitive restructuring technique in reducing depression?

Research Hypotheses

Ho1: There is no significant influence of marital status on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS infected women.

Ho2: There is no significant influence of educational level on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS infected women.

Ho3: There is no significant influence of level of income on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS infected women.

Methodology

The research design that was adopted for this study is quasi-experimental, involving pre-test, post-test control group design. Radhakrishna (2002) opined that quasi-experimental design involves the manipulation of one or more independent variables but there is no random assignment to conditions. Therefore, women with HIV/AIDS were not randomly assigned but purposively selected to experimental and control groups.

The population of the study consists of all women with HIV/AIDS receiving treatment in the government health institutions (hospitals) in Kaduna State. The estimated population of women with HIV/AIDS that are experiencing depression was estimated to be around 350 in Kaduna State (National Bureau of Statistics (NBC), 2015).

The sample size of the study was 60 women living with HIV/AIDS. They were composed into three groups of 20 members each. Radhakrishna (2002) opines that better results are achieved in smaller groups and that there will be effective concentration and understanding of the treatment procedures by group members. Two

Government Health Institutions was selected using simple random sampling. The subjects for the study, 60 women with HIV/AIDS, were selected using purposive sampling technique.

To collect data for the study, the researcher adopted Beck Depression Inventory (2012). The Beck Depression Inventory (BDI) is a 21 item test. The Beck Depression Inventory comprises of two sections; that is section A and B. Section “A” comprises of the respondents’ socio-economic background data, such as marital status, income level and level of education while section “B” comprises of questions on depression. It is one of the most widely used scales for assessing intensity of depression and each of its items describes a specific behaviour manifestation of depression. Beck Depression Inventory Scale was used to assess moderate Depression in this study. The classification of depression scores is as follows: 1-10: These ups and downs are considered; 11-16: Mild mood disturbance, 17-20: Borderline clinical depression, 21-30: Moderate depression, 31-40: Severe depression and Over 40: Extreme depression.

The researcher selected subjects who obtained scores between 21 and 30 on BDI inventory for the research. Therefore, patients whose scores can be described as ‘without depression’ and ‘severe depression’ were not eligible to participate in the study. Those without depression do not require psychological treatment, while those with severe depression are for the psychiatrist, at the social welfare units of the hospitals.

In relation to the validity of the BDI, the instrument is of high content validity for all items in the instruments have been proven to assess depression. The instrument which was developed and used based on recommendation of American Psychiatric Association (2013) has reported both high content and construct validity of the instruments. The instrument was presented to experts in the Department of Educational Psychology and Counselling, Ahmadu Bello University, Zaria for face and content validity.

In the case of reliability of the instrument, a pilot study was carried out to ensure the reliability of the instrument for this study. To achieve this, the Beck Depression Inventory (BDI) was subjected to a test-retest exercise. The data collected was subjected to computer analysis using the statistical package for social sciences (SPSS) for the results. The instrument was administered to 40 women respondents from Yusuf Dantsoho General Hospital Kaduna that was not used for the study but shared similar characteristics in all respects. The data generated was analysed using Pearson Product Moment Correlation (PPMC) which yielded a reliability coefficient of 0.89. This was a confirmation of test of reliability by Olayiwola (2010). According to the author, an instrument is considered reliable if it lies between 0 and 1, and that the closer the

calculated reliability coefficient is to zero, the less reliable is the instrument, and the closer the calculated reliability coefficient is to 1, the more reliable is the instrument. This therefore confirms the reliability of the data collection instrument used as being fit for the main work.

There were three phases of treatment; they were pre-treatment phase, treatment phase and post-treatment. When women with HIV/AIDS for the study were identified, the women were grouped for treatment. In order to reduce the interaction of the various groups, the treatment phase was divided into three categories.

i. Pre- Treatment Phase

This formed the introductory stage; that is meeting of the researcher with the women with HIV/AIDS. During the introductory session, the researcher sought the consent of the women by asking them to sign consent form to express their willingness to voluntarily participate in the study. The researcher then administered the research instrument to both literate and illiterate respondents with the assistance of the research assistant, who assisted in the translation of the instrument to the illiterate respondents, so as to obtain their pre-test data.

ii. Treatment Phase

The participants were given treatment in cognitive restructuring and treatment package using methods like coping skills, assessments, relaxation, challenging certain thoughts, thought stopping, homework, projects. The First treatment group (women assessing treatment on Tuesdays) went through cognitive restructuring technique. The treatment groups were exposed to (8) weeks of psychological treatment intervention. The control group did not benefit from the psychological treatment sessions, but where asked to help fill the instrument during the pre and post- test, after greetings and introduction by the researcher.

iii. Post Treatment Phase

This is the final phase of the psychological and counselling intervention. After 8 weeks of psychological intervention, the BDI instrument was re-administered to the three groups with the view to collecting post-test data to determine the effectiveness of psychological treatment intervention in helping women with HIV/AIDS manage depression associated with the disease.

For the purpose of hypotheses testing, Analysis of Variance (ANOVA) was used to test all the hypotheses. All null hypotheses were tested at 0.05 level of significance.

Presentation of results

Ho1: There is no significant influence of marital status on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS infected women. Result of analysis is presented in Table 1.

Table 1: ANOVA test of post-treatment levels of depression based on marital status of HIV/AIDS infected women exposed to cognitive restructuring

Variable	N	Mean	SD	DF	F	p-value
Married	25	35.04	15.75			
Single	3	36.66	16.74	2	1.190	.330
Divorced	6	43.66	12.73			
Widowed	1	59.00	15.49			

Table 1 shows that there is no significant influence of marital status in the post treatment levels of depression of HIV/AIDS women exposed to cognitive restructuring with mean of 35.04 for married women, 36.66 for single women, 43.66 for divorced and 59.00 for widowed respectively with ($f= 1.190$, $p=.330$). Thus, the mean difference that exists among the married, single, divorced and widowed is not significant. Therefore, irrespective of marital status, the treatment with cognitive restructuring is having the same effect. This is because the p-value of .330 is greater than 0.05 level of significance. Thus, the null hypothesis that says there no significant influence of marital status on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS women is thereby retained.

Ho2: There is no significant influence of educational level on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS infected women.

Result of analysis is presented in Table 2.

Table 2: ANOVA test of post-treatment level of depression based on educational level of HIV/AIDS infected women exposed to cognitive restructuring

Variable	N	Mean	SD	DF	F	p-value
Primary	4	55.50	6.65			
Secondary	18	30.50	11.71	2	6.501	.004
Tertiary	13	41.21	16.67			

Table 2 shows that there is significant influence of educational level on the post treatment level of depression of HIV/AIDS women exposed to cognitive restructuring with mean scores of 55.50 for primary school level HIV/AIDS infected women, 30.50

for secondary school level and 41.21 for tertiary level, ($f=6.501$, $p=.004$). This could be observed from the mean difference between primary, secondary and tertiary level respectively as confirmed by the p-value of .004. For a detailed comparison of the difference that exists among the level of education, post Hoc test was run as reported on table 3.

Table 3: LSD Post Hoc Test comparing different educational levels exposed to cognitive restructuring

Multiple Comparisons						
Dependent Variable: DEPRESSION						
(I) EDU level	(J) EDU level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Primary	Secondary	25.00000*	7.44435	.002	9.8364	40.1636
	Tertiary	14.26923	7.70024	.073	-1.4156	29.9541
Secondary	Primary	-25.00000*	7.44435	.002	-40.1636	-9.8364
	Tertiary	-10.73077*	4.90179	.036	-20.7154	-.7462
Tertiary	Primary	-14.26923	7.70024	.073	-29.9541	1.4156
	Secondary	10.73077*	4.90179	.036	.7462	20.7154

*The mean difference is significant at the 0.05 level.

From the post Hoc multiple comparisons, primary and secondary education levels HIV/AIDS infected women significantly differ in their depression level with mean of 55.50 for primary school education and mean of 30.50 for those with secondary school education confirmed by $p=.002$; also secondary and tertiary levels significantly differ in their depression level with $p= .036$. On the whole, it indicates that the treatment is more effective for those women with secondary education with the least mean of 30.50 followed by tertiary with the mean of 41.21, then finally the result shows that the treatment is less effective for primary school leavers HIV/AIDS infected women. The negative signs in the post Hoc Multiple Comparisons are as a result of the mean differences; subtracting the upper values from the lower value will give a negative figure. Thus, the hypothesis that says there is no significant influence of educational level on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS infected women is hereby rejected.

Ho3: There is no significant influence of level of income on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS infected women. Result of analysis is presented in Table 4.

Table 4: ANOVA test of post-treatment levels of depression based on levels of income of HIV/AIDS infected women exposed to cognitive restructuring

Income level	N	Mean	SD	DF	F	p-value
High Income	0	0.00	0			
Low income	22	35.90	12.25	1	5.00	.485
Middle income	13	39.76	16.20			

Table 4 shows that, based on the mean of 35.90 for low income and 39.76 for middle income, ($f = \text{ratio} = 5.00$, $p\text{-value} = .485$), there is no significant influence of level of income on the effectiveness of cognitive restructuring on depression of HIV/AIDS infected women. This is because the p -value of .485 is greater than 0.05 level of significance. Thus, the null hypothesis that says there is no significant influence of level of income on the effectiveness of cognitive restructuring technique on depression of HIV/AIDS infected women is thereby retained.

Discussion of the findings

An aspect of the findings of this study shows that there is no significant difference in the post treatment level of depression based on marital status of HIV/AIDS women exposed to cognitive restructuring. This indicates that marital status does not have significant influence on the effectiveness of cognitive restructuring on depression of HIV/AIDS women. This study is supported by Aderanti and Hassan (2011), who found that the effectiveness of cognitive restructuring in treating depression is irrespective of marital status because cognitive factors play an important and well documented role in delinquent behaviour since the way people think has a controlling effect on their actions.

Another finding of the study shows that there is significant difference in the post treatment level of depression based on educational level of subjects exposed to cognitive restructuring with the technique being more effective for those women with secondary school education. The possible reason why the technique (cognitive restructuring) is more effective for those women with secondary school education is that those with primary education have low level of education and exposure to adapt to the technique effectively for adjustment in their depression; while those with tertiary education are well informed about the dangers and negative effect of the disease, thus perceiving it as a threat to their wellbeing and realization of their goals in life. This has caused the technique not to be more effective on them compared to those with

secondary education who have moderate education level. In their own case, they employed the technique and derived the best out of it. Hence, their depression is within tolerable limit. This finding could be supported by drawing analogy from the study by Nwachukwu (2007) who linked depressive symptoms as measured by the CES-D to CD4 lymphocyte, a measure of immune functioning in a study on multi-centre AIDS cohort study of 330 gay and bisexual men with HIV. At baseline, 19.7% of the men were identified as depressed and 16.1% were identified as affectively depressed. For these groups, CD4 lymphocytes declined 38%, and 34% faster than non-depressed participants, respectively. However in the analysis, early AIDS diagnosis and mortality appeared to be related to depression, differences were significant based on educational level.

The third finding of this study shows that there is no significant difference in the post treatment level of depression between low income and middle income HIV/AIDS infected women exposed to cognitive restructuring. The study corroborates the findings from Aderanti and Hassan (2011) who reported that cognitive restructuring is effective on rebelliousness and also effective on the rebelliousness of inmates from all socio-economic backgrounds.

Conclusion

Based on the findings of this research, this study concluded that there is no significant difference in the post treatment levels of depression based on marital status of HIV/AIDS women exposed to cognitive restructuring technique. The result of the study concludes that there is significant effect in the post treatment level of depression based on educational level of HIV/AIDS infected women exposed to cognitive restructuring technique. It was further concluded that there is no significant effect in the post treatment levels of depression between low income and middle income HIV/AIDS infected women exposed with cognitive restructuring technique.

Recommendations

1. Psychologists and counsellors should employ cognitive restructuring technique irrespective of female patients' marital status.
2. Psychologists and counsellors should consider educational level of patients in employing cognitive restructuring technique as it is found to be more effective for those with secondary school education.
3. Psychologists and counsellors should employ cognitive restructuring technique irrespective of female patients' levels of income.

References

- Aderanti, R. A. & Hassan, T. (2011). Differential Effectiveness of Cognitive Restructuring and Self-Management in the Treatment of Adolescents. *The Romanian Journal of Psychology, Psychotherapy and Neuroscience*, 1(1), 193-217.
- Akincigil, A. (2011). Antidepressant treatment and adherence to antiretroviral medications among privately insured persons with HIV/AIDS. *AIDS and Behavior*, 15(8), 1819-1828. doi: 10.1007/s10461-011-9938-6.
- Aljassem, K. (2016). Gender Differences in Severity and Correlates of Depression Symptoms in People Living with HIV in Ontario, Canada. *Journal of the International Association of Providers of AIDS Care*, 15(1), 23-35.
- American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington, V.A: American Psychiatric Publishing.
- Baba, M. M. & Omotara, B. A. (2001). The Source and Effect of Information on AIDs among Adolescents. *Journal of Health Education and Sport Science*, 5, 86-90.
- Beck, A. T. (2012). *Depression: Causes and Treatment*. Philadelphia: University of Pennsylvania Press.
- Benedict, H. T. (2004). Impact of HIV/AIDS on infected men and women in Kwara State of Nigeria. An unpublished MEd thesis, Ahmadu Bello University, Zaria.
- Ellis, A. (1989). *Reason and Emotion in Psychotherapy*. New York: Lyle Stuart.
- National Bureau of Statistics (NBC) (2015). Statistical Report on Women and Men in Nigeria. Retrieved from https://www.nigerianstat.gov.ng/2015%20Statistical%20Report%20on%20Women%20and%20Men%20in%20Nigeria_final.pdf.
- Nwachukwu, D. N. (2007). *The Teacher Counsellor: Enhancing Millennium Teaching – Learning Processes*. Calabar: University of Calabar Press.
- Olayiwola, S. (2010). Alternative Mode of Funding for Academic Research in Nigeria Universities. *Higher Education Quarterly*, 64(2), 149 – 160.
- Rabkin, J. G. (2008). HIV and Depression: 2008 Review and Update. *Current HIV/AIDS Reports* 2008, 5, 163–171.
- Radhakrishna, R. B. (2002). Tips for developing and testing questionnaires/instruments. *Journal of Extension*, 45(1).
- Shumba, C. (2013). Prevalence of Depressive Symptoms Amongst Highly Active Antiretroviral Therapy (HAART) Patients in AIDS Relief Uganda. *J Public Health Afr*, 4(2). doi: 10.4081/jphia.2013.e19.
- World Health Organization (WHO, 1994). *Constitution of the World Health Organization. Basic Documents, 40th ed.* Geneva: WHO.