

Efficacy of Acceptance and Commitment Therapy on Psychological Health and Inflexibility among Mothers of Children with Cerebral Palsy

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Abstract

Caregiving may be a burden to the Psychological Health (PH) of mothers of children with Cerebral Palsy (CP). However, little attention is given to psychotherapeutic intervention in managing mothers caring for such children in Nigeria. This study, therefore, investigated the efficacy of Acceptance and Commitment Therapy (ACT) among mothers of children with CP accessing therapeutic outpatient services at Federal Psychiatric Hospital (FPH) Lagos, Nigeria. This research follows a quasi-experimental type with pre-test, post-test plans, and control group. Accordingly, 30 people were selected through volunteered sampling among mothers of children with CP accessing therapeutic outpatient services at child/adolescent unit of Federal Psychiatric Hospital. Then, they were randomly placed into two groups of 20 (experimental and control) each and evaluated using research tools. Research tools consisted of Acceptance and Action Questionnaire (AAQ-II) and Cerebral Palsy Psychological Health Scale (CPPHS) whose reliability and validity have been confirmed in previous studies. Research data were analysed using the analysis of covariance (ANCOVA). The statistical analysis confirmed the difference in the components of psychological health and acceptance level/psychological flexibility in the experimental group, which had received acceptance and commitment therapy compared to the group that had not received any therapy in this regard (control group) ($p < .05$). The ACT had significant effect on psychological health $\{F(1,36) = 7.94\}$ after controlling for severity of illness and parental knowledge. Participants in experimental group improved in their psychological health when compared with those in control group $\{t(38) = 3.20\}$. Acceptance level/ psychological flexibility of the mothers improved after intervention with a decrease in pretest mean score ($\bar{X} = 31.60$) to posttest mean score ($\bar{X} = 24.10$). Acceptance and commitment therapy improves psychological health

Keywords: acceptance and commitment therapy, cerebral palsy, psychological flexibility, psychological health.

Abstrak

Pengasuhan dapat menjadi beban bagi Psychological Health (PH) ibu dari anak dengan Cerebral Palsy (CP). Namun, sedikit perhatian diberikan pada intervensi psikoterapi dalam mengelola ibu yang merawat anak-anak tersebut di Nigeria. Oleh karena itu, penelitian ini menyelidiki kemanjuran Acceptance and Commitment Therapy (ACT) di antara ibu dari anak-anak dengan CP yang mengakses layanan rawat jalan terapeutik di Federal Psychiatric Hospital (FPH) Lagos, Nigeria. Penelitian ini mengikuti jenis eksperimen semu dengan pre-test, post-test plan, dan control group. Dengan demikian, 30 orang dipilih melalui pengambilan sampel sukarela di antara ibu dari anak-anak dengan CP yang mengakses layanan rawat jalan terapeutik di unit anak/remaja Federal Psychiatric Hospital. Kemudian, mereka secara acak ditempatkan ke dalam dua kelompok masing-masing 20 (eksperimen dan kontrol) dan dievaluasi menggunakan alat penelitian. Alat penelitian terdiri dari Acceptance and Action Questionnaire (AAQ-II) dan Cerebral Palsy Psychological Health Scale (CPPHS) yang reliabilitas dan validitasnya telah dikonfirmasi pada penelitian sebelumnya. Data penelitian dianalisis menggunakan analisis kovarians

(ANCOVA). Analisis statistik mengkonfirmasi perbedaan komponen kesehatan psikologis dan tingkat penerimaan/fleksibilitas psikologis pada kelompok eksperimen yang telah menerima terapi penerimaan dan komitmen dibandingkan dengan kelompok yang tidak menerima terapi apa pun dalam hal ini (kelompok kontrol) ($p < .05$). ACT berpengaruh signifikan terhadap kesehatan psikologis $\{F(1.36) = 7.94\}$ setelah mengontrol tingkat keparahan penyakit dan pengetahuan orang tua. Peserta dalam kelompok eksperimen meningkat dalam kesehatan psikologis mereka bila dibandingkan dengan mereka di kelompok kontrol $\{t(38) = 3,20\}$. Tingkat penerimaan/fleksibilitas psikologis ibu meningkat setelah intervensi dengan penurunan skor rata-rata pretest ($X = 31.60$) menjadi skor rata-rata posttest ($X = 24.10$). Terapi penerimaan dan komitmen meningkatkan kesehatan psikologis.

Kata kunci: cerebral palsy, fleksibilitas psikologis, kesehatan psikologis, terapi penerimaan dan komitmen.

Introduction

Psychological health is a form of well-being in which a person recognizes his or her abilities to manage normal stresses of life, work productively and fruitfully to make a positive impact to his or her environment (World Health Organization, 2003). The psychological health of persons is determined by several factors which include biological, social, economic, environment, individual and family. Psychological health should not be confused with the question of if one suffers from a mental or emotional disorder. It is how individuals cope, how they are doing in response to their environmental, emotional and social situations and whether they find life to be interesting and enjoyable (World Health Organization, 2003). The way individuals handle a stressful situation in their life is very pivotal in maintaining their psychological health. Also, how we function and adapt to situations and whether our existence is satisfying and productive is also important to our psychological health. Informal caregivers play an important part in helping people with the illness. This is of special relevance when it has to do with developmental disorders. The impact of caregiving could be serious on informal caregivers' psychological, physical and social health. It has often been suggested that the extra stress of taking care of a child with intellectual disabilities exposes parents to the risk of suffering from depression (Azeem et al., 2013).

Caregiving role takes on an entirely different significance when a child experiences functional limitations and possible long-term dependence. The presence of a child with cerebral palsy in a family could generate profound emotional stress, feeling of gloom, and a sense of guilt (Begum & Desai, 2010). One of the main challenges of parents is managing their child's chronic health complications effectively alongside their responsibilities in providing necessities of everyday living. Consequently, the responsibility of taking care of a child with a complex disability at home might be somewhat burdensome for caregivers. The delivery of such care may prove injurious to both the physical and psychological health of the parents. Irrespective of the degree of intellectual disability, caregivers must cope with the special needs of their children thereby making it not simply a problem for affected children, but in factual reality a 'family disease' (Witt et al., 2003). This research study set out to explore the effective skills mothers having such children should possess and this seems more germane in underdeveloped countries where families bear the burden of care for such children unlike in developed countries where external assistance and institutions are readily available to help lessen the burden on family members, thereby improving their psychological health (Geere et al., 2013; Daniel et al., 2021; Moosa-Tayob & Risenga, 2022)

Hayes & Smith (2005, as cited in Hulbert-Williams et al., 2015) explained that Acceptance and Commitment Therapy (ACT) is less concerned with traditional models of psychopathological categorization and maintains that suffering is normal and should not be seen as an indication of ill-health. ACT incorporates a trans-diagnostic model of intervention emphasizing the broadening of an individual's psychological repertoires to improve coping responses to adverse stressor events. In contrast to symptom-reductive traditional models of Cognitive Behavioural Therapy intervention, ACT does not target and alter the content, frequency or form of troubling cognitions. Rather, ACT aimed to diminish their behavioural impact. In doing so, ACT interventions resulted in an increase in psychological flexibility, which acted as a buffer to psychological distress. ACT encourages patients to "defuse" from distressing

psychological experiences and assume an accepting stand toward one's experience as it unfolds in real time. Hulbert-Williams et al. (2015) explained that ACT promotes the idea of committed action as a drive toward goals in the context of experiential acceptance. It encourages that rather than concentrating on altering psychological events directly through first-order change strategies, these interventions seek to change the significance of those events and the individual's connection to them through second-order change strategies such as acceptance or cognitive defusion. Furthermore, the authors emphasized that the ACT targets each of these main problems with the general aim of increasing psychological flexibility. Also, they argued that ACT is effective for different psychological disorders and other treatment towards life-affirming and motivational perspective of the world. Other researchers have further stipulated that ACT has been presented to be useful in handling anxiety, depression and substance abuse (Bohlmeijer et al., 2011; Heydari et al., 2018). Despite the efficacy evidence as identified in previous research, little or no attention has been given to caregivers of children with cerebral palsy. Subsequently, this study sought to fill this gap of limited research on ACT impact on the psychological health of mothers who have children with cerebral palsy in developing county like Nigeria. In addition, this inadequate research-based evidence has posed challenges to the mental health service providers on the management of informal caregivers' psychological health. To meet the inadequate research evidence and limited-service provision necessitated this study provided empirical research evidence and tested the efficacy of Acceptance and Commitment therapy among mothers of cerebral palsy children which has been found effective and efficacious in management of pain, stress, and depression (McCracken & Vowles, 2014; Landy et al., 2015). In addition, its efficacy in helping people with anxiety issues, substance addiction and functional issues made it necessary and worth investigating among these caregivers' population (Forman et al., 2007). It was also found to be effective in improving quality of life, stress management and life satisfaction (Flaxman & Bond, 2010).

Hence, this study aimed at knowing if Acceptance and Commitment Therapy would improve the psychological health and psychological flexibility of mothers of children with cerebral palsy with the specific need to assess the efficacy of Acceptance and Commitment therapy on psychological health among mothers of children with Cerebral palsy in Nigeria.

Hypotheses

The following hypothesis were examined in the study

1. Acceptance and Commitment therapy will significantly have effect on psychological health of mothers of children with cerebral palsy, controlling for the influence of severity of illness and parental knowledge.
2. Participants in experimental group will significantly score higher on psychological health than participants in control groups.
3. There will be a significant increase in the total score of participants in experimental group on psychological health after intervention than before intervention.
4. Acceptance level/psychological flexibility of mothers of children with cerebral palsy will significantly improve after exposure to therapy (ACT).

Operational Definition of terms

1. **Acceptance and Commitment Therapy:** This is a group tailored psychotherapy that aims to increase acceptance of the full range of subjective experiences, including distressing thoughts, beliefs, sensations, and feelings, in an effort to promote desired behaviour change that will lead to improved quality of life. It was carried out using ACT module modified by the researcher.
2. **Psychological flexibility:** This is one's ability of being aware, open, and committed to behaviors that are congruent with deeply held values despite distressing or unwanted private events.

Methods

This research is quasi-experimental, and the applied plan in the research is pretest-posttest plans with two groups. Pretest and posttest plan was composed of the experimental and the control group. Both groups were measured twice. The first measurement was performed as a pretest before the intervention, and the second measurement was performed at the end of required interventions.

Population, sample, and sampling

The statistical population of the present research included mothers having children with cerebral palsy accessing outpatient clinic services at the Child/Adolescents unit of the Federal Neuro Psychiatric Hospital, Lagos Nigeria. Random allocation into either the experimental or control group was done through simple balloting technique of yes or no. Twenty 'yes' and twenty 'no' were written and rolled together for each participant to pick one. Those who picked 'yes' were assigned into experimental group while those who picked 'no' were assigned into control group respectively. The researcher then scheduled appointments for the participants after their groups were determined. The experimental group members participated in eight 90 minutes' sessions per week. No intervention was done in the control group.

Inclusion criteria

1. Mothers having children with cerebral palsy who are screened and are judged to have poor psychological health, that is, participants who scored below the mean on Cerebral Palsy Psychological Health Scale
2. Indicated their willingness to participate in ACT intervention.

Research Instruments

Cerebral Palsy Psychological Health Scale (this information served as pre-test score), Acceptance and Action Questionnaire, Value Direction Worksheet and Modified Acceptance and Commitment Therapy Protocol were used for data collection and therapy (see **Table 1.**).

Acceptance and Action Questionnaire (AAQ-II)

Acceptance and Action Questionnaire (AAQ-II) is a 7-item unidimensional measure that assesses the construct of acceptance, experiential avoidance, and psychological inflexibility. The scale was developed by Hayes, Strosahl, Wilson, Bissett, Pistorello, Toarmino and McCurry (2004). The scale was revised for better psychometric properties by Bond, Hayes, Baer, Carpenter, Guenole, Orcutt, Waltz and Zettle (2011). The instrument comprises of items such as: 'I worry about not being able to control my worries and feelings'; 'It seems like most people are handling their lives better than I'; 'My painful memories prevent me from having a fulfilling life'. It was scored using Likert response format rated from 1=never true to 7= always true. A total score ranges from 7 to 49. Higher scores on the AAQ-II indicate greater psychological inflexibility. Specifically, higher levels of psychological inflexibility, as measured by the AAQ-II, are related to greater levels of depression, anxiety, stress, and overall psychological distress. AAQ-II achieved a test-retest reliability is .81 and a validity score of .97.

Cerebral Palsy Psychological Health Scale (CPPHS)

Cerebral Palsy Psychological Health Scale (CPPHS) is a 16-item scale developed by Olayinka-Aliu & Osinowo (in press) to assess caregivers' presence of wellness. The response format ranges from Never=5, Seldom=4, Sometimes=3, Often=2, Almost Always=1. It comprises of items like: 'I have lost the hope of achieving much if I am still with this child'; 'I have stopped being myself since the problem of this child started'. The scale achieved a Cronbach alpha of 0.92. In terms of construct validity, the Kaiser-Meyer measure of MSA was 0.59 showing meritorious sampling adequacy. In addition, the 16-item battery was factor analyzed using Principle Axis Factoring (PAF) with varimax rotation. A factor structure explaining 78.23% of the variance was obtained. The factors yielded are the dimensions of hopelessness, depression, social distress and stigma. The factor loading for the items ranged from 0.57 to 0.86 which indicated that all the items loaded well on the factors precipitated. For the convergence validity, the Pearson correlation analysis revealed that there was significant positive relationship between Cerebral Palsy Psychological Health Scale and Mental Health Index ($r = 0.68, p < .05$). Positive psychological health increases in the same direction for mental health index and CPPHS. The norm was set using the average score of the Cerebral Palsy Psychological Health Scale ($\bar{X} = 37.87, SD = 8.32$). High score above the mean suggests that the respondents have good psychological health while scores equal or below the mean suggests poor psychological health.

The Value Direction Worksheet

The Value Direction Worksheet was developed as a tool for use during Acceptance and Commitment Therapy. It was developed by Wilson et al., (2010). The 20 items questionnaire asks the individual to first

rate the importance/satisfaction of values in 10 areas of life (e.g. family, work, education, spirituality, relationships, recreation etc.), and then the consistency of intention/action towards those values taken during the last week. Items such as 'What are the mysteries of life before which I stand in awe?' 'What are the things larger than my own life that inspire me?' 'In what (if anything) do I have faith?' under the spirituality domain. Each item is rated on a Likert scale from 1 to 10. The Value Living composite is calculated by multiplying the importance and consistency responses for each domain and then calculating the mean of those scores. The resulting Valued Living Composite scores ranges from 10 to 100.

Gross Motor Function Classification System (GMFCS)

Gross Motor Function Classification System was expanded and revised by Palisano et al., (2007). The Gross Motor Function Classification System (GMFCS) for cerebral palsy is based on self-initiated movement, with emphasis on sitting, transfers, and mobility. GMFCS was used in the study to determine the level of severity. Items such as 'my child has difficulty controlling head and trunk posture in most positions and uses specially adapted seating to sit comfortable and has to be lifted by another person to move about'; 'my child can sit on own when placed on the floor and can move within a room and uses hands for support to maintain sitting balance and usually uses adaptive equipment for sitting and standing'. The scale is ordinal, with no intent that the distances between levels be considered equal. Mild classification is for those on level I/II, Moderate classification level III and severe classification IV/V. The questionnaire was categorized and administered for different age groups (such as 2-4years, 4-6 years. 6-12 years) based on their developmental needs.

Parental Knowledge of Cerebral Palsy Questionnaire (PKCP)

Parental Knowledge of Cerebral Palsy Questionnaire is a set of 8 items developed by Shilpa, Anjul & Hemar (2014) to assess the knowledge of parents on cerebral palsy disorder. Items such as 'What do you think is the cause of this disorders 'cerebral palsy'? 'Will this disease be totally cured?' were on the questionnaire. The assessor rated the response as "correct" or "incorrect" to responses given by the parent. It achieved a Cronbach alpha of 0.67 in the study.

Research Procedure

Ethical approval was obtained from the Lagos Research Ethics Committee. The participants were recruited and briefed on the purpose of the study and assured that the data collected from them shall be used for research purpose only. Thereafter, participants that met the inclusion criteria were approached. The purpose, risk and benefits of the study were explained to them. The participants were also assured of their confidentiality. Informed consent processes were duly followed. Participants with poor psychological health were selected randomly. A pretest data assessment was obtained to reduce sampling error using AAQ-II and CPPHS to determine the level of psychological health and psychological flexibility of the participants respectively. To avoid intrusion, the cooperation of medical personnel on duty was sought to avoid intrusion throughout the duration of the intervention. The experimental groups were exposed to 8 sessions of group Acceptance and Commitment Therapy with a session held per week while the control group was exposed to general health talk. Each session lasted 90 minutes. If participant has more than one missed session, result was not considered, but they still had a right to participate in all the remaining sessions. Each session included exercises concerning the six processes of ACT. At the end of the eighth session, the researcher obtained the post-test assessment data alongside with the help of research assistant (see **Table 1.** for detail therapy protocol). The pre-test scores were then compared with the post-test scores to ascertain the effectiveness of the intervention. Two months after the end of the session, a meeting was conducted on two groups, and their psychological health and psychological flexibility were measured and recorded. The obtained scores from the pre-test and post-test scores were to assess the effectiveness of the independent variables. This was used to establish the efficacy of ACT therapeutic intervention. Target factor for change is a better psychological health and flexibility among mothers caring for children with cerebral palsy.

Table 1. Showing Summary of Contents in Sessions Based on Acceptance and Commitment Therapy

Session	Description of session activities
First	Therapeutic relationship, the people acquaintance with the matter of therapy sessions and treatment contract
Second	Discovering and assessing inefficient strategies used by participants to improve on their psychological health in different positions and evaluation of their effects, discussion of temporary and ineffective methods of using analogies, feedback and providing assignments
Third	Assisting people to accept painful personal events without conflict with them using analogies, feedback and providing assignments
Fourth	Explain to avoid painful experiences and knowledge of its consequences, training acceptance steps, changing language concepts using the of analogies, relaxation training, feedback and providing assignments
Fifth	The introduction of three - dimensional behavioural model to express the common communication behaviour/emotions, psychological and visible behavioural functions and discussion of trying to change behaviour based on them, feedback and providing assignments
Sixth	Explaining the concepts of roles and terms, viewing themselves as a context and contacting by analogies, understand the different sensory perceptions and mental separation, feedback and providing assignments
Seventh	Explaining the concept of values, creating motivation and empowering people for a better life, concentration exercises, feedback and providing assignments
Eighth	Training commitment to action, identifying behavioural patterns by values and commitment to act, summing up meetings, implementation after testing

Control of Extraneous Variables

Participants were randomly assigned to various treatment groups. This allowed for the reasonable proportion of basic characteristics in the sample being included in the study. Simple random sampling technique (yes-no) was used to assign the participants to the groups. Secondly, there was equal representation of mothers with and without knowledge of cerebral palsy. Thirdly, the same instruction was given to the participants in the experimental and control group. The researcher conducted the experiment personally to control for experimenter effect. The cooperation of medical personnel on duty was sought to avoid intrusion throughout the duration of intervention. The control group received two brief sessions of Acceptance and Commitment Therapy after the completion of the experiment with the experimental group.

Data Analysis

Hypotheses one was tested using ANCOVA, hypotheses two was tested using t-test for independent measures and hypotheses three and four were tested using t-test of dependent measure.

Results and Discussion

Descriptive Statistics of Participants

The descriptive statistics showing the demographic characteristics of the participants for the study are presented in **Table 2.** below:

Table 2. Showing the Demographics of Participants in Percentages

Variable	Group	Percentage
Age	Young Adulthood	31.2
	Middle Adulthood	25.0
	Late Adulthood	43.8
	Total	100.0
Marital Status	Married	78.8
	Separated	10.0
	Widow	11.2
	Total	100.0
Educational Level	Ph.D	12.5
	Bs.c/HND	46.3
	OND/Diploma	22.5
	SSCE	10.0
	PSLC	5.0
	No formal Education	3.7
	Total	100.0
Occupation	Skilled	62.0
	Semiskilled	24.0
	Unskilled	14.0
	Total	100.0

Table 2. shows that 43.8% of the participants were in their late adulthood, 31.2% were in young adulthood while 25% were in their middle adulthood. A larger percentage of the mothers 78.8% were married, 11.2% were widow while 10% were separated. On occupation, 62% of the respondents were skilled workers, 24% were semi-skilled and 14% were unskilled. The educational qualification of mothers shows that larger proportion of the mothers 46.3% acquired B.Sc./HND degree, 22.5% possessed an OND/diploma degree, 12.5% were Ph. D holders, 10% were Senior Secondary Certificate holders, 5% were Primary School Leaving Certificate holders while 3.7% had no formal education.

Table 3. T-Test Summary Table Showing the level of differences between the Control and Experimental Groups on Psychological Health Prior to ACT Intervention

Groups	N	\bar{X}	Std	Df	T	P
Control	20	33.45	5.69			
Experimental	20	34.35	6.20	38	-.48	>0.05

The result on **Table 3.** shows that prior to intervention, participants in the control group (\bar{X} =33.45, S.D=5.69) were not significantly different in their level of psychological health compared to participants in the experimental group (\bar{X} =34.35, S.D =6.20). This shows that there was no significant difference in the level of psychological health reported by participants in the two groups (control and experimental) prior to intervention [$t(38) = -.48, p > .05$]. This result implies that participants in the two groups were statistically identical in their level of psychological health before the intervention.

Hypothesis One

The first hypothesis stated that Acceptance and Commitment Therapy will significantly have effect on psychological health of mothers of children with cerebral palsy, controlling for the influence of severity of illness and parental knowledge. This was tested using one way analysis of covariance and result was presented in **Table 4.** below.

Table 4. Summary of One-way ANCOVA Showing the effect of Acceptance and Commitment Therapy on Psychological Health of Mothers of Children with Cerebral Palsy

Source	SS	df	MS	F	P	η_p^2
Illness Severity	158.52	1	158.52	8.39	<.05	.13
Parental knowledge	59.32	1	59.32	3.14	>.05	.08
Treatment	150.89	1	150.89	7.97	<.05	.19
Error	681.20	36	18.92			
Corrected Total	1085.50	39				

Covariates appearing in the model are evaluated at the following values: GMFCS = 2.55, Parental knowledge = 20.8000

Table 4. presented a One-way analysis of covariance result, showing the significant effect of acceptance and commitment therapy on psychological health of mothers of children with cerebral palsy $F(1, 36) = 7.97, p < .05, \eta_p^2 = .19$, controlling for the influence of severity of illness $F(1, 36) = 8.39, p < .05$, parental knowledge $F(1, 36) = 3.14, p > .05$. This indicates that acceptance and commitment therapy has significant effect on psychological health of mothers of children with cerebral palsy. In other words, it implies that the psychological health of mothers of children with cerebral palsy exposed to different treatment groups is significantly different. Administered interventions (ACT) were responsible for 19% of the change observed in the psychological health of mothers of children with cerebral palsy. To ascertain the magnitude significant determinant of F value, a group comparison test was conducted. Consequently, LSD post hoc test was used to compare the two groups. The results are shown in **Table 5.** below.

Table 5. Showing the Summary of LSD Post Hoc Analysis of Study Groups on Psychological Health of Mothers having Children with Cerebral Palsy

Study Groups	N	\bar{X}	SD	LSD Post hoc Test	p
Experimental Group	20	33.65	5.76	3.97*	<.05
Control Group	20	28.85	3.44		

** $p < .01$. * $p < .05$

The post-hoc result presented in **Table 5.** shows that mother of children exposed to Acceptance and Commitment Therapy had the most stable psychological health compared to the control group. The participants in the control group had low scores on psychological health scale, indicating poor psychological health. In view of the result, hypothesis one was therefore accepted.

Hypothesis Two

The second hypotheses stated that participants in experimental groups will significantly score higher on psychological health than participants in control group. The hypothesis was tested using the t-test of independent measure and the result presented in **Table 6.** below:

Table 6. Showing the significant effect of ACT on Psychological health of Mothers Having Children with Cerebral Palsy

DV	Group	N	\bar{X}	SD	df	t	P
Psychological Health	Experimental	20	33.65	5.76	38	3.20	< .05
	Control	20	28.85	3.44			

The finding obtained in **Table 6.** showed that Acceptance and Commitment therapy has significant effect on psychological health of mothers of children with cerebral palsy ($t(38) = 3.20, p < .05$). Further observation of the difference of means showed that participants in the experimental groups reported a

significant better psychological health ($\bar{X} = 33.65$, S.D. = 5.76) than those in the control group ($\bar{X} = 28.85$, S.D. = 3.44). Hypothesis two was therefore accepted.

Hypothesis Three

The seventh hypothesis stated that there will be a significant increase in the scores of participants in experimental group on psychological health scale after intervention than before intervention. This hypothesis was tested using the t-test of repeated measure and the result was presented in **Table 7**. below:

Table 7. Showing the Significant effect of ACT on Psychological health within Experimental group

DV	Group	N	\bar{X}	SD	df	t	P
Psychological Health	Pre-Intervention	20	21.35	9.13	19	-2.10	< .05
	Post-Intervention	20	25.70	9.71			

The findings obtained in **Table 7**. showed that there was a significant difference in the scores of psychological health of mothers of children with cerebral palsy before and after intervention ($t(19) = -2.10$, $p < .05$). Furthermore, it was found that there was a significant increase in their mean scores on psychological health, indicating better psychological health from pretest score ($\bar{X} = 21.35$, $SD = 9.13$) to posttest score ($\bar{X} = 25.70$, $S.D. = 9.71$). This confirmed the stated hypothesis.

Hypothesis Four

Acceptance level/Psychological flexibility of mothers will significantly improve with exposure to Acceptance and Commitment therapy. This hypothesis was tested using the t-test for repeated measure and the result is presented in **Table 8**. below.

Table 8. T-test Summary Table Showing Significant Difference in Mothers' Acceptance/flexibility Level before and after intervention

	Experiment	N	\bar{X}	SD	df	t	p
Acceptance/Flexibility	Pre-test	20	31.60	4.27	19	-3.84	<0.05
	Posttest	20	24.10	9.11			

The result from table 1.6 showed that there was a significant difference in the scores of the mothers at pretest and posttest ($t(19) = -3.84$, $p < .05$) which indicated a better psychological flexibility/acceptance level of mothers of children with cerebral palsy after exposure to therapy (ACT). The pretest score of acceptance level of the mother ($\bar{X} = 31.60$, $SD = 4.27$) significantly reduced at posttest ($\bar{X} = 24.10$, $SD = 9.11$) indicating better acceptance and psychological flexibility. The hypothesis was thus accepted.

DISCUSSION

The effectiveness of Acceptance and Commitment Therapy on psychological health and flexibility was explored in the current study, and the findings revealed that Acceptance and Commitment Therapy can promote psychological health and flexibility. These findings supported our hypothesis, and the findings are in line with those of earlier investigations. For instance, Bach, Hayes, and Steven (2002) intervention research indicated that when compared to therapy as usual with seriously mentally ill inpatients, a three-hour ACT intervention reduced re-hospitalization by nearly half during a four-month and one-year follow-up. Also, Bohlmeijer et al., (2011) found that ACT was extremely effective in the treatment of depression, with participants reporting significant reductions in depressed symptoms following intervention that lasted for three months. Furthermore, in research conducted by Forman et al., (2007) individuals who underwent Cognitive Therapy and Acceptance and Commitment Therapy exhibited significant and comparable improvements in depression, anxiety, functional issues, quality of life, and life satisfaction which was replicated in this study as a significant difference was observed

between the experimental and control group on their psychological health reports. Likewise, research evidence supported the study findings as backed with Flaxman & Bond (2010) study which also discovered that ACT and SIT are equally helpful in stress management.

Furthermore, the study hypothesis which stated that a significant difference would be observed in the experimental and control group was confirmed. The study outcome corroborated the findings of Bethay et al., (2013) who found that ACT group members experienced less psychological discomfort from pretest to follow-up than the control group. In their comparison to the control group, the ACT group showed a simultaneous decrease in the acceptability of burnout-related thoughts from pretest to follow-up. In addition, Arch, Eifert, Davies, Vilaradaga, Rose, and Craske (2012) also discovered that anxiety symptoms were decreased following acceptance and commitment therapy (ACT) than before the intervention.

The mothers' acceptance level and psychological flexibility improved after exposure to therapy, as seen by a drop in mean score from pre-test to post-test, showing improved psychological flexibility in the mothers. This conclusion corroborated Flaxman & Bond's (2010) findings that ACT influenced psychological flexibility in their research population. In addition, more authors have discovered that Acceptance and Commitment Therapy can help those with anxiety and depression (Heydari et al., 2018).

The demographic variable of occupation was of significant in the study findings as participants who are skilled workers communicated better psychological health than their counterparts (semi-skilled/unskilled). The finding supported Eberl et al., (2017) study which found that hours of caregiving have a negative effect on mental health. It was affirmed that having been employed for a limited working hours has a positive effect on the health status even when combined with informal care duties. It could also be said that been engaged in an occupation provided better psychological health outcome. The study outcome is also consistent with Fredriksen-Goldsen & Scharlach (2001) study which found that for caregivers who remain in the workforce, employment can have a positive impact by providing them with financial, social and psychological resources. Paid employment can offer caregivers a much-needed break from their care duties, access to social support through co-worker relationships, thereby improving relations with the individual for whom they offer care. Finally, ACT was used to manage psychological health in this study, with the overall goal of enhancing psychological flexibility. After adjusting for severity and parental knowledge of the child's disease, the present study found that ACT influenced the psychological health and enhanced the psychological flexibility of mothers of children with cerebral palsy.

ACT is intended to develop acceptance of the complete spectrum of subjective experiences, including uncomfortable thoughts, beliefs, feelings, and emotions. The core idea is that attempting to regulate undesired subjective experiences is frequently ineffective, if not downright detrimental, in terms of reducing discomfort. As a result, patients are encouraged to fully engage with their experience and move toward desired outcomes without resistance. ACT methods went on to say that rather than avoiding challenges, people should stay committed to taking steps that would help them quit fighting the inevitable and instead thrive. The core elements of ACT included letting go of the fight to control undesired thoughts and feelings, being attentively aware of the present, and committing to a course of action that is consistent with one's values. As a result, ACT is about both acceptance and commitment. It employs a trans-diagnostic intervention paradigm that emphasizes the expansion of an individual's psychological repertoires for better coping reactions to stressful experiences. ACT does not target and modify the content, frequency, or shape of troublesome cognitions, unlike classic symptom-reductive approaches of CBT psychotherapy. ACT, on the other hand, intended to reduce their behavioral effects. As a result, ACT therapies increased psychological flexibility, acting as a buffer against psychological discomfort. In this study, participants were urged to "defuse" from painful psychological events by taking a positive attitude toward their experience as it unfolded in real time. Using the framework of experiential acceptance, ACT emphasizes the concept of committed action as a drive toward goals. It promotes the use of second-order change tactics such as acceptance or cognitive defusion rather than focusing on changing psychological events directly through first-order change tactics.

The study mainly covered a rehabilitation centre of a mental institution in Southwest Nigeria in its examination of efficacy of psychological health among mothers of children of cerebral palsy. Perhaps an attempt could be made by other researchers to increase the research area to other geopolitical zones. Having established the efficacy of acceptance and commitment therapy on psychological health/flexibility among mothers of children of Cerebral Palsy. It is imperative to note that future research could explore the efficacy of Acceptance and Commitment Therapy on caregivers of other

developmental and childhood disabilities such as Autism, Down syndrome, Learning disabilities among others.

Conclusion

The study concluded that Acceptance and Commitment Therapy had significant effect on psychological health of mothers of children with cerebral palsy after controlling for the influence of severity of illness and parental knowledge. In other words, the psychological health of mothers of children with cerebral palsy exposed to different treatment conditions is significantly different. It is further concluded that participants in the experimental groups reported a significant better psychological health than those in the control group which established how efficacious Acceptance and Commitment Therapy is as a form of psychological intervention for managing poor psychological health among mothers of children living with cerebral palsy. In addition, it was concluded that a better psychological flexibility/acceptance level was reported among mothers of children with cerebral palsy after exposure to therapy. Thereby, informing our knowledge of the capacity of the mothers to accept the inevitable distressing and unpleasant feelings, cultivating mindfulness to reduce excessive involvement, and their ability to recognizing and identifying personal values related to behavioural goals. This has implications for treatment planning in that focusing on the vulnerable population while leaving out the caregivers, who are primarily quasi-therapists, may not be as effective. The management package should include assistance with improved methods to deal with the emotions that could come up while dealing with the child's challenging behavior. Individuals with experiential avoidance, which is a component of psychological inflexibility, have worse psychological health, according to ACT. Acceptance and commitment therapy, on the other hand, thereby aimed to reduce experiential avoidance and increase psychological flexibility by accepting the inevitable distressing and unpleasant feelings, cultivating mindfulness to reduce excessive involvement, recognising and identifying personal values related to behavioural goals. Participants in the study were encouraged to speak honestly and without resistance about their experiences as they progress toward worthy goals, also to welcome them without judging their truth or untruth when they arise. This approach is known to increase people's willingness to adapt in the face of hardship and motivate them to achieve worthy life goals.

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