

An Empirical Analysis of the Effectiveness of Behavioral Cognitive Mentoring: A Case Study of the Mothers of Children with Cerebral Palsy

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Abstract

Problem Statement: The births of a new child bring with it the changes to the structure of the family and add up to the responsibilities borne by the parents. Parents wish that they have an ideal natural child. However, the opposite occurs in which sometimes parents have a handicapped child that may affect the family, which then entail parents' suffering from psychological stresses which require specialized assistance provided by specialists and counsellors. This study is aimed to determining the effect of CBTP for mothers of children with cerebral palsy and to determine the most effective and helpful coping strategy in managing their stress. **Methodology:** To achieve the research mentioned above objectives, the researcher conducted research based on quantitative data. This research involved a quasi-experimental research approach in which the quantitative data collected from the participants to conclude the research findings. **Results:** The Mann-Witney results for CBTP revealed that that there is a significant difference in the Pre-experimental and Pre-control groups of the pre-distribution specifically mothers of children with cerebral palsy ($U = 44.50$, $z = -3.527$, $p = 0.000$, $r = 0.459$), the experimental and control Post-experimental and Post-control groups ($U = 25.00$, $z = -5.071$, $p = 0.000$, $r = 0.660$), and the Delay-experimental and Delay-control group of the immediate-distribution of questionnaires during the program ($U = 14.00$, $z = -6.283$, $p = 0.000$, $r = -0.818$). These clearly showed that the mothers of children with cerebral palsy in the experimental group performed significantly better than those in the control group. By looking at the differences within groups, the results of using the Wilcoxon Signed-Rank test showed that there was a significant difference in the of experimental group before, after and delay exposure to the program, while for control group showed the insignificant difference. **Conclusion:** The Program is an effective intervention for behavioral problems in children with cerebral palsy. It is also suggested that the government provide more training sessions, employ the collaborative activity as an out-of-class assignment, and carefully monitor the process.

Keywords: Cerebral Palsy, Psychological Stress, Cbtp, Intervention Program

Introduction

Cerebral palsy, a non-progressive but incurable condition caused by damage to the immature brain during infancy, Cerebral palsy (CP) is an umbrella term that describes a group of disorders on motor dysfunction due to a permanent and non-progressive lesion in a developing brain (Basavanthappa, 2015). The motor dysfunction of children with CP is further complicated by the development of secondary impairments such as joint deformities, muscle contractures, hip dislocation, and scoliosis (Neergård, 2016; Wright, Lam, Mistry & Walker, 2018; Fosdahl, Jahnsen, Kvalheim, & Holm, 2019 Peters, Chang, Morales, Barnes & Allegretti, 2019). Secondary impairments have a significant impact on restricting the participation of children with CP in daily living activities (Lorentzen, et al., 2019). Moreover, upbringing child is one of the most sacred gifts and a tasking endeavor that every parent faces (Doucet, Hall, & Giraud, 2019). Attributing the relationships, emotions of raising a child can be stress-driven most times, but dissociating the cons from the blessings, it is most rewarding. Additionally, stress is the unconditioned reaction to stimuli as a result of alteration in one's physical, emotional, and psychological balance. These factors could be due to family instability and tension, work place imbalance, financial jumbo, and excitements, health and diseases, among others. It is usually defined in a different context and domain. According to Webster's dictionary, stress is "a constraining force or influence such as a physical, chemical, or emotional factor that causes bodily or mental tension and may be a factor in disease causation". Parental instability is the first point of effect once a child is born with a deformity or disability. In this case, the disability being CP as it affects the mothers. A study conducted by (Minners, 1988) is seen as a foundational study of in the 1980s; in the study, 60 mothers of children born with disabilities were investigated to identify the effects of stress on the sample mothers. The study mediated stress as to facilitate the degree of coping using the external family influences, resources, and child characteristics. The study was carried out in Toronto with the most influencing variables being resources, child degree of disability and manageability attempts that aid child's daily activities, social supports, religiosity, marital status of the mother and the professional engagements through the supports received.

Conversely, cognitive behaviors have been very helpful in introspecting different forms of depression, anxiety, and stresses. These refers to a Behavioral Cognitive Mentoring Program in reducing Cognitive and psychological problems of the child among Mothers (CBTP) and Behavioral Cognitive Mentoring Program in reducing the Feelings of despair and frustration among Mothers (CBTFD), which includes the inculcation of several forms of behavioral and pre-listed approaches that are borrowed from some principles (Puka, Ferro, Anderson, & Speechley, 2019). Hence, the task of raising children with disability brings great stress and uncommon changes (Rodrigues, Fontanella, Avó, Germano, & Melo, 2019). According to the submission by (Hill, Boulding, Dunigan, & Elder, 1949), raising children with such disabilities affects parenting in regards to psychological, emotional, physical and financial stress due to medications and consultations (Biondic, Wiener & Martinussen, 2019). Therefore, with these large reports and summing the high number at children with disabilities, mothers have been identified to be the ones on the receiving end. The effect of this disability procreates stress, nagging, temperaments, and other forms of stress (Miranda, Mira, Berenguer, Rosello, & Baixauli, 2019). Mothers bond through birth and nurturing of the kids make stress an embodiment. Recently, cerebral palsy (CP) is a form of disability that affects the functionality of the kids by the non-progressive development of the motor neurons and other brain functions (Nuara, Avanzini, Rizzolatti, & Fabbri-Destro, 2019). It is defined as "a non-

progressive motor impairment syndrome caused by a problem in the developing brain." This is one of the most common disabilities found in newly born kids.

Cognitive Behavioral Theory

The cognitive-behavioral theory is researched and submitted as one of the most critically and agreed model of depression and stress management. It is believed that negative and maladaptive thoughts accumulated by irrational or dysfunctional beliefs are the central phenomenon to stress. Its choice of this research is due to its wide reach ability and added holistic approach to depression. This has the vital incorporation of learning and behavioral ingredients to cognitive theories (Wilde, & Dozois, 2019). It has recorded successes which are evident for the past two centuries to the management of stress and depression. The crises on stress handling through depression were prominently described from the learning or cognitive-behavioral models (Farrington, 2019). These models unanimously approached the problem of the over-generalized response of the depressed person to aversive conditions.

Furthermore, researchers in line with reinforcement contingencies indicated that daily mood is positively correlated with pleasant events and negatively correlated with unpleasant events (Lennard, Scott, & Johnson, 2019; Stouwe, et al., 2019; Rubin, 2019) Deficiency in social ability and skill reinforcement also produce depression (REhm, 1977). However, the cognitive-behavioral theory is one of the highest influential models of addressing depression, which believed that negative and maladaptive thoughts generated by irrational or dysfunctional beliefs are the central phenomenon that leads to depression. It is chosen in this research because of its holistic approach to depression that incorporated learning, behavior, and cognitive theories. It has been documented that, for the past two centuries, the phenomena of depression were prominently described from the learning or cognitive-behavioral models. Both the models unanimously approached the problem of the overgeneralized response of the depressed person to aversive conditions. The target of cognitive-behavioral therapy for the treatment of depression is to replace irrational thoughts in hopes of encouraging a balanced and the actual perspective for stress patient. In this way, the patient can attack problems tactically and prevent further depressive relapses. Studies have been conducted to evaluate cognitive-behavioral therapy for stress (PPD) either alone or in combination with drugs and psychotherapy (Li, & Ashkanasy, 2019).

Methods

Research Design

Exploratory and empirical research was used in this study. An exploratory configuration considered the most appropriate approach in perspective of the way of the issue being explored. Creswell (2012) construes that the purpose of the exploratory methods design is to collect data and use the results to understand a research problem.

Population, Sample Size and Sampling Techniques of the Study

The target population of this study comprised all children with disability from Irbid City in Jordan. The total number of children with disability from Irbid City in Jordan is 100. Similarly, researchers used various procedures in sampling populations. It is the conditions of the study and the crucial nature of participants that determine which procedures are to be employed in the sampling population (Drew, Hardman, & Hosp, 2008). The sample size comprised 30 children with disability from Irbid City in Jordan. The group consisted of female and male

children. All of the participants are children with disability from Irbid City in Jordan. Moreover, the participants of this study were selected based on convenience sampling technique. All the participants were children with disability.

Method of Data Collection

This study conducted in Jordan, and the data collected through a self-administered questionnaire where the respondents asked to complete the survey on their own. The purpose of choosing a self-administered questionnaire in this study is that it reduces cost by eliminating the interviewer device and items such as computer software (Kirkpatrick, et al., 2019).

Quasi-Experimental Study

The data of the quantitative of this study collected from the quasi-experimental study, which has three sections, pre distribution of the questionnaire, intervention or training, and delay. A quasi-experiment employed in the present study to investigate the effectiveness of behavioral cognitive mentoring of the mothers of children with cerebral palsy. In this a non-equivalent controls group quasi-experimental design used. This is a common quasi-experiment design that a pre and post and delay and control group (Joan, 2006).

Design of the Quasi-Experimental Study

Three sections of non-equivalent quasi-experimental study will be designed in this study as presented in the diagram below:

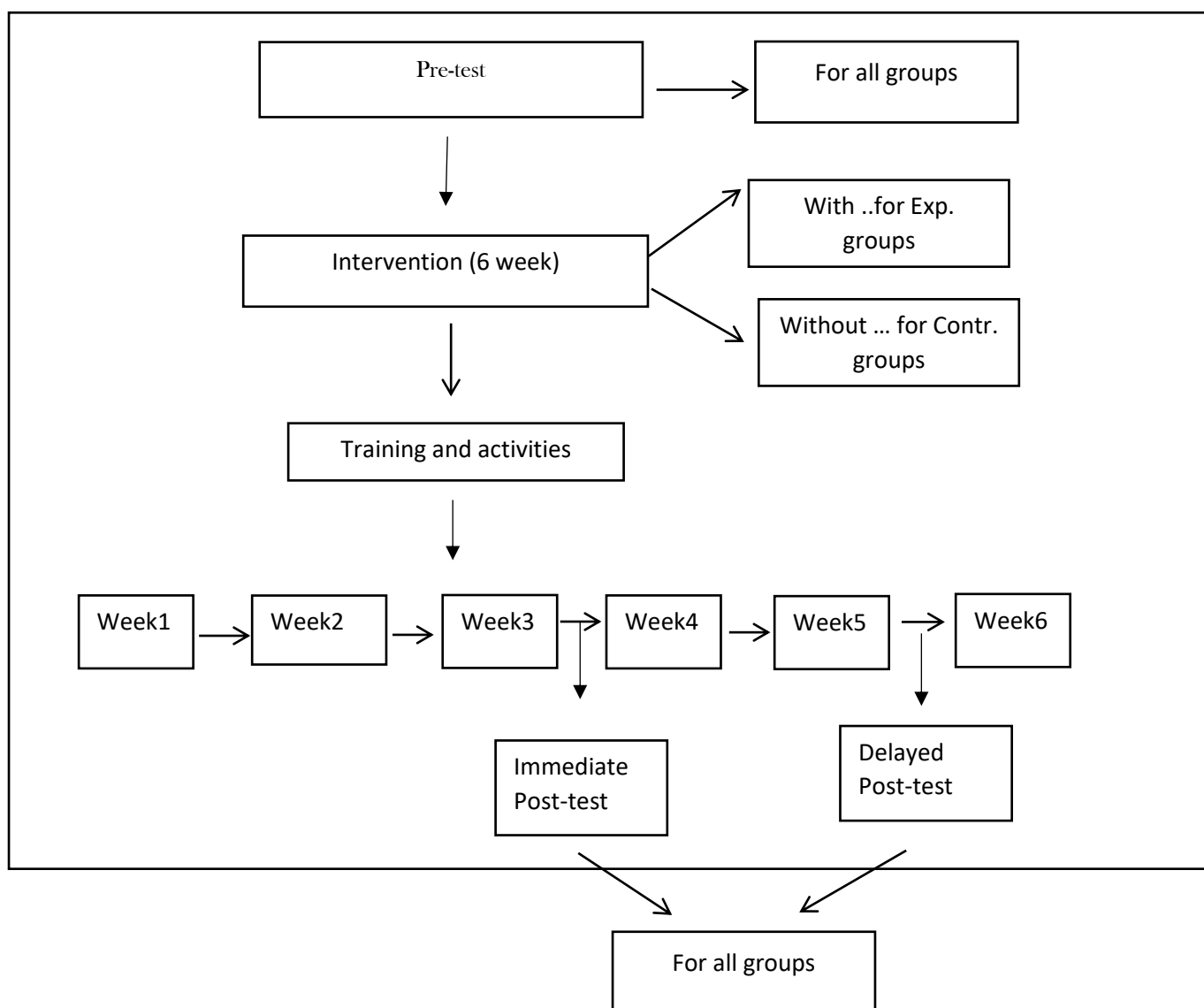


Figure 1 Quasi-Experimental Design Diagram

This diagram represents the plow of the quasi-experimental design employed in this study. In shows the three stages of conducting the experimental studies, pre-test, intervention training, and post-test. Exp. stands for “experimental group” and Contr. Stands for “control group.”

Pre-Test and Post-Tests

First test administered to all controlled and experimental groups in the first week of the study. This is the first stage of the quasi-experimental study. However, before the beginning of the actual study, a pilot study conducted to ascertain the validity and reliability of the instrument and validate the general procedure of the study as presented in sub-section blow. The questionnaires were given to all groups. Meanwhile, after distributing the pre questionnaires, a six-week intervention programmed followed. At the middle of the training period, second distributions (immediate post questionnaire) were distributed, followed by the delayed post-distribution at the end of the training. Post-distribution is the test administered to the groups

after the treatment to determine the effect of the treatment on the experimental groups and to observe the causes or changes among the variables being observed (Mertens, 2014). The post-distribution administered twice at the middle (immediate post-distribution) and at the end of the training session (delayed post-distribution) the rationale was to ascertain the reliability of the instrument by correlating the gain scores of the participants.

Validation and Reliability of the Research Instrument

According to Fraenkel et al. (2015), the term validity was defined as the degree of correctness and appropriateness of inferences inferred by a researcher. It measures the situation where the instrument is designed to measure. To qualify for factor analysis, Pallant (2011) suggested that the value of correlation matrix must be 0.3 or above with KMO of 0.6 and above and Bartlett's test must be significant at $p < .05$. In addition, the researcher used Cronbach's Alpha to determine the reliability of the research instrument for the quantitative aspect. Cronbach's Alpha enables the researcher to determine how well the items relate to the construct and measure the constructs appropriately. Moreover, the researcher sent the revised questionnaire to some 30 randomly selected respondents to gather the Pilot Study data. Using the data from the Pilot Study, the researcher employed the Exploratory Factor Analysis (EFA) to explore and assess the dimensionality of items measuring every construct in the study. Many researchers, for example Hoque et al. (2017, 2018), Noor et al. (2015), and Yahaya et al. (2018) stress that the researcher needs to employ Exploratory Factor Analysis (EFA) procedure for every construct to determine if the dimensionality of items has changed from the previous study where the dimensions were developed.

The Exploratory Factor Analysis (EFA) for CBTP

This construct has 10 measuring items in a questionnaire. The EFA results in Table 1 show the descriptive statistics for every item measuring CBTP. This construct was measured using the interval scale from 1 (strongly disagree) to 5 (strongly agree) with the given item statement (Awang et al., 2016; Hoque et al., 2018). The item statement, the mean score, and standard deviation of the score for every item is presented in Table 1.

Table 1:

The mean and standard deviation for items measuring CBTP

	Mean	Std. Deviation
CBTP1	4.33	.661
CBTP2	4.20	.664
CBTP3	3.87	.819
CBTP4	3.70	.952
CBTP5	4.83	.379
CBTP6	4.73	.450
CBTP7	3.87	.900
CBTP8	3.83	.834
CBTP9	3.73	.907
CBTP10	3.53	.900

The Exploratory Factor Analysis (EFA) using the extraction method of Principal Component with Varimax (Variation Maximization) Rotation was performed on these 10 items measuring the

CBTP construct. The results in Table 2 indicate that the Bartlett's Test of Sphericity is significant (P-Value < 0.05). Furthermore, the measure of sampling adequacy by Kaiser-Meyer-Olkin (KMO) is excellent since it exceeded the required value of 0.6 (Awang, 2010, 2012; Hoque et al., 2015; and Noor et al., 2015). These two results (Bartlett's Test is significant, and KMO > 0.6) indicate that the data is adequate to proceed further with the data reduction procedure in EFA (Yahaya et al., 2018).

Table 2:

The KMO and Bartlett's Test Score for CBTP

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.793
Bartlett's Test of Sphericity	Approx. Chi-Square	180.065
	df	45
	Sig.	.000

The scree plot in Figure 2 indicates three dimensions or components that emerged from the EFA procedure for this latent construct. In other words, the EFA procedure has grouped 10 items into three dimensions or components. Each dimension or component has its own set of measuring items. The rotated component matrix will determine precisely which items belong to which component (Awang, 2010, 2012).

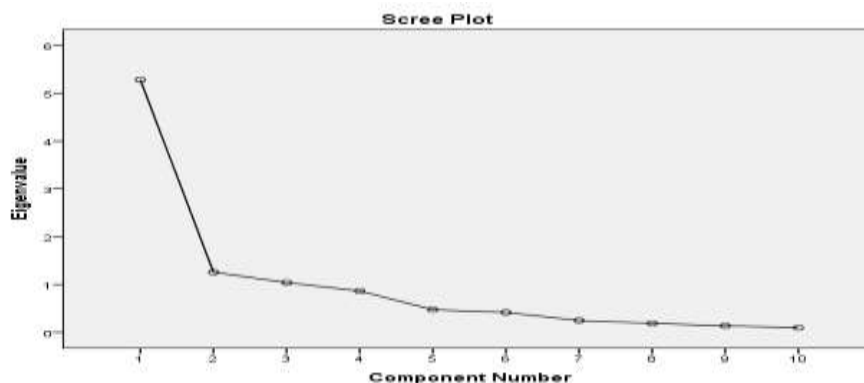


Figure 2: The Scree Plot shows three components emerged from the EFA procedure

The results in Table 3 shows there are three dimensions or components emerged from the EFA procedure based on the computed Eigenvalue greater than 1.0. The eigenvalues ranged between 1.231 and 3.282. The variance explained for component 1 is 32.820%, component 2 is 30.660%, and component 3 is 12.314%. The total variance explained for measuring this construct is 75.794%. The total variance explained for the construct is acceptable since it exceeds the minimum of 60% (Yahaya et al., 2018)

Table 3:

The Total Variance Explained for CBTP

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	3.282	32.820	32.820
2	3.066	30.660	63.480
3	1.231	12.314	75.794

The following table, Table 4, presents the three dimensions or components emerged, and their respective items resulted from the EFA procedure. The factor loading for every item should be greater than 0.6 in order to be retained (Yahaya et al., 2018). The measuring items, their factor loading, and their respective components are shown in Table 4.

Table 4:

The Components and Their Respective Items

Rotated Component Matrix			
	Component		
	1	2	3
CBTP1		.816	
CBTP2		.762	
CBTP3		.900	
CBTP4	.670		
CBTP5			.718
CBTP6			.770
CBTP7	.646	.603	
CBTP8	.692		
CBTP9	.885		
CBTP10	.903		
a. Rotation converged in 5 iterations.			

Finally, the study needs to compute the value of Cronbach's Alpha, which reflects the Internal Reliability for the retained items in measuring this latent construct. The internal reliability or internal consistency indicates how strong the respective items are holding together in measuring the respective construct. The value of Cronbach's Alpha should be greater than 0.7 for the items to achieve the Internal Reliability (Awang, 2012). Table 5 presented the Cronbach Alpha for every CBTP component.

Table 5:

The Internal Reliability for the CBTP Construct

Cronbach's Alpha	N of Items
.884	10

Method of Data Analysis

Data analysis procedure simply refers to the process and techniques employed by the researcher to scrutinize the collected data in order to extract the information from the data and give a summary description of the results based on the analysis of the data (Nwana, 1981). The test for normality of data distribution skewness and kurtosis were performed using SPSS to double-check if a distribution of scores significantly differed from a normal distribution. The data were sampled from a Gaussian distribution, i.e., not normally distributed data, the no-parametric test of Man Witney and Wilcoxon were used to analyze the data collected through the questionnaire.

Result

Descriptive Statistics and Assessment of Normality

Based on the measurement model, the study has examined the normality for the items with a view to assess the distribution for every item or variable involved in the measurement model. In addition, the data characteristics of variables under study were explored through measurement of central tendency (mean), and measurement of dispersion (standard deviation) so as to discover the data characteristics. In addition, using the Statistical Package for Social Science (SPSS) version 24.0, the mean and standard deviation were examined. Table 11 below outlines the mean and standard deviation for all indicators. Generally, the mean values for all indicators were well above 3.5. This value indicated that majority of the respondents in this study were in agreement with the questions. Moreover, Table 11 showed that the measures of Skewness and Kurtosis on most of the items involved in the measurement model exceeding the threshold of -2.58 and $+2.58$ which indicated that the data is not normally distributed as recommended by Hair et al. (2014). This reflects that the data has not satisfied the cut-off value of multivariate normality distribution. Therefore, the study can proceed for further analysis with Mann-Whitney and Wilcoxon.

Table 11

Descriptive Statistics

Statistics	Mean	Std. Deviation	Skewness	Kurtosis
CBTPPRTE	4.0633	0.53915	3.363	-2.926
CBTPPTE	4.0367	0.60997	-0.275	0.029
CBTPITE	4.2433	0.46139	3.138	-0.774
CBTPPRTC	3.9833	0.68334	-0.111	-0.581
CBTPPTC	3.9567	0.73188	-0.295	-2.656
CBTPITC	4.2133	0.39977	2.596	-0.318

Mann-Whitney Results of CBTP

The results presented in Table 12, below, the Mann-Whitney (U) result from the response has revealed that there is a significant difference in the Pre-experimental and Pre-control CBTP of the pre-distribution specifically mothers of children with cerebral palsy as the present study used. The $U = 44.50$, $z = -3.527$, $p = 0.000$, $r = 0.459$. By comparing the two mean ranks of experimental and control groups, it was evident also that the mean rank value of experimental group (mean rank = 41.68) was greater than the mean rank value of control group (mean rank=29.32). This clearly showed a significance difference between the two

groups. The effect size of $r = -0.459$ represents a medium to large effect, thus indicating that the effect of the program was a substantive among experimental and control groups.

Table 12:

Between-Group among Pre-Experimental and Pre-Control CBTP

Program	N	Mean Rank	U value	z value	p value	r value
Pre-Experimental	30	41.68	44.50	-3.527	0.000	-0.459**
Pre-Control	30	29.32				

Keywords: U value (Mann-Whitney), p value (positive value) r value (rate value) and z value
()

Note: Significant at $**p < 0.05$

In addition, Table 13, below, the Mann-Whitney (U) result from the response has revealed that there is a significant difference in the Post-experimental and Post-control CBTP of the post-distribution explicitly mothers of children with cerebral palsy as the current study used. The $U = 25.00$, $z = -5.071$, $p = 0.000$, $r = 0.660$. The two mean ranks of Post-experimental and Post-control CBTP groups, also indicated that the mean rank value of Post-experimental group (mean rank = 53.33) was higher than the mean rank value of Post-RE group (mean rank = 34.67). This confirmed that there is a significant difference between Post-experimental and Post-control CBTP groups. The effect size of $r = -0.660$ represents a large effect, hence signifying that the effect of the program was essential between Post-experimental and Post-control CBTP.

Table 13:

Between-Group among Post-experimental and Post-control CBTP

Program	N	Mean Rank	U value	z value	p value	r value
Post-Experimental	30	53.33	25.00	-5.071	0.000	0.660**
Post-Control	30	34.67				

Keywords: U value (Mann-Whitney), p-value (positive value) r-value (rate value) and z value
(),

Note: Significant at $**p < 0.05$

Moreover, Table 14, the Mann-Whitney U test has indicated that there was a significant difference in the Delay-experimental and Delay-control CBTP of the immediate-distribution of questionnaires during the program ($U = 14.00$, $z = -6.283$, $p = 0.000$, $r = -0.818$). By comparing the two mean ranks of the program, it was also evident that the mean rank value of the experimental program (mean rank = 70.13) was greater than the mean rank value of control program (mean rank = 39.87). This clearly exposed that the difference between groups was statistical significance. The effect size of $r = -0.818$ represents a very large effect; therefore, demonstrating that of the program was substantive between Delay-experimental and Delay-control CBTP

Table 14:

Between-Group between Delay-experimental and Delay-control CBTP

Group	N	Mean Rank	U value	z value	p-value	r value
Delay-Experimental	30	70.13	14.00	-6.283	0.000	0.818**
Delay-Control	30	39.87				

Keywords: U value (Mann-Whitney), p value (positive value) r value (rate value) and z value
()

Note: Significant at ** $p < 0.05$

Findings of Within-Program

Though this study did not aim specifically to investigate the within-program impact on the reducing psychological stress among Mothers of Children with Cerebral Palsy, it is essential to present the within-program findings in the three questionnaires to get a complete picture of the impact of the approach. Data were analyzed using the Wilcoxon Signed-Rank test this is supported by Hanus & Fox (2015) where they assess the effects of gamification in the classroom based on a longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. They mention that the results found from the students in the gamified course showed less motivation, satisfaction, and empowerment over time than those in the non-gamified class.

Significant Impact of the Experimental Group of CBTP

Based on, Table 18, the Wilcoxon Signed-Rank test showed that there was a significant difference within the experimental group of the Pre and Post distribution of the questionnaires in the CBTP ($T = 0.000$, $z = -3.352$, $p = 0.000$, $r = -0.622$). The result clearly showed that exposure to CBTP had a significant impact on Mothers of Children with Cerebral Palsy in the related task. The effect size of $r = -0.622$ represents a large effect, thus demonstrating that the effect of CBTP approach in increasing the Mothers' of Children with Cerebral Palsy knowledge of the CBTP was substantive.

Table 18:

Within-Group of the Experimental Group of CBTP

Program	N	T value	z value	p-value	r value
Before	30	0.000	-3.352	0.000	0.622**
After	30				

Keywords: p-value (probability value) r-value (rate value) and z value ()

Note: Significant at ** $p < 0.05$

In a similar vein, Table 19, the Wilcoxon Signed-Rank test showed that there was a significant difference within the experimental group of Pre and delay distribution of the questionnaires ($T = 0.000$, $z = -4.564$, $p = 0.000$, $r = -0.843$). The result revealed that exposure to CBTP had a significant impact on Mothers of Children with Cerebral Palsy in the related task. The effect size of $r = -0.843$ represents a very large effect, therefore signifying that the effect of CBTP approach in growing the Mothers' of Children with Cerebral Palsy knowledge of the CBTP was substantive.

Table 19:

Within-Group of the Experimental Group of CBTP

Program	N	T value	z value	p-value	r value
Before	30	0.000	-4.564	0.000	0.843**
Delay	30				

Keywords: p-value (probability value) r-value (rate value) and z value ()

Note: Significant at ** $p < 0.05$

Furthermore, the Wilcoxon Signed-Rank test showed that there was a significant difference in the post and delay distribution of the questionnaires ($T = 0.000$, $z = -5.029$, $p = 0.000$, $r = -0.934$). The result evidently indicated that exposure to CBTP had a significant impact on Mothers of Children with Cerebral Palsy in the related task. The effect size of $r = -0.934$ represents a very large effect, thus indicating that the effect of CBTP approach in increasing the Mothers' of Children with Cerebral Palsy knowledge of the CBTP was substantive.

Table 20:

Within-Group of the Experimental Group of CBTP

Program	N	T value	z value	p-value	r value
After	30	0.000	-5.029	0.000	0.934**
Delay	30				

Keywords: p-value (probability value) r-value (rate value) and z value ()

Note: Significant at ** $p < 0.05$

Discussion

Children with CP are at increased risk of behavioural and emotional problems, with 1 in 4 developing a behavioural disorder. This research showed that parental intervention, especially CBTP and CBTFD, is effective in addressing behavioural and emotional issues in children with CP. EBT alone has been correlated with decreases in the behavioural and emotional issues reported by parents in accordance with prior studies. In addition, RE was associated with dysfunctional parenting styles reduction. The effect sizes obtained for both pre, post and delay distribution of the questionnaires showed that the approach in increasing the Mothers' of Children with Cerebral Palsy knowledge of both CBTP and RE were a substantive effect. This showed the government's pressing need to tackle behavioural and emotional issues in children with CP, as well as the good fit between the requirements of education and support services and the effectiveness of parenting intervention. Ideally, parenting interventions, especially CBTP, can be translated. CBTP is intended for population-level dissemination, is readily implemented in educational or support services, is accessible in high- and low-resource areas and is accessible in many nations. Therefore, parenting interventions, such as RE, should be a component of standard care for children with CP families. The findings indicated an extra contribution to CBTFD, with specific advantages for parenting and child hyperactivity. The combined intervention of CBTP and RE, but not CBTP alone, was connected with reduced CBTP-scale child hyperactivity, parental over-reactivity, parental verbosity, and child behavioural issues. At six weeks of follow-up, mothers who received the combined CBTP and CBTFD intervention showed reduced childhood hyperactivity, parental laxity, and parental verbosity compared to mothers who did not receive the training.

Conclusion

This study aims to prepare children to be integrated into standard schools after fifth grade; however, it seems that very few students with CP in Jordan are being provided with the appropriate educational and supportive services. For example, many children with CP do not receive treatment for major impairments such as speech and feeding problems, and in addition, learning and behavior problems have been reported by most parents as not being treated. It is of note that special education and psychotherapy are not available for children with CP. However, parents reported a lack of general information concerning the services available for their children. In addition, early intervention services in Jordan are limited in the present. In general, students with physical disabilities, including children with CP, and their parents are not provided with sufficient services and support across a wide range of areas, including medical, educational, emotional, social, physical, and intellectual aspects.

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