Journal of Fundamentals of Mental Health

Mashhad University of Medical Sciences

Psychiatry and Behavioral Sciences Research Center

Original Article

Effectiveness of combined purposeful play therapy and narrative therapy on pre-school children's attention and concentration

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Abstract

Introduction: According to some studies, play therapy and story-telling affect on children's attention and concentration so the purpose of the present study aimed to assess the effect of combination of purposeful play therapy and narrative therapy on attention and concentration of preschool children in a nonclinical sample.

Materials and Methods: The statistical community of the clinical trial with pre-test, post-test design is all pre-school children of region 2 in Mashhad. Four kindergartens were selected through multi cluster sampling method and 60 children with IQ score in range of 90-119 (6-6.5 years old girls and boys) were selected by available sampling method and randomly assigned to 4 groups (10 persons) play therapy, narrative therapy, combined purposeful play therapy and narrative therapy and control group. The research instruments were Wechsler IQ test, test of every day attention for children and continuous performance test. Experimental groups received 12 sessions of interventions and the control group did not receive any treatment. The data were analyzed using descriptive statistics and multi variable analysis of covariance.

Results: Children's attention increased significantly more in combined play therapy and narrative therapy group than the other groups (P=0.004). However, children's concentration did not increase significantly more than other groups in the combined play therapy and narrative therapy group (P=0.31).

Conclusion: According to the results, purposeful play therapy and narrative therapy as attractive and educational tools can promote attention factors and prevent to attention defects among children.

Keywords: Attention, Concentration, Play, Preschool children, Story

Please cite this paper as:
Farzadfard SA, Abdekhodaee MS, GhenaeeChaman Abadi A. Effectiveness of combined purposeful play therapy and narrative therapy on pre-school children's attention and concentration. Journal of Fundamentals of Mental Health 2015 Sep-Oct; 17(5): 222-28.

Introduction

One of the most common problems among children which cause decrease in their performance at school is attention deficit. Sidman defines attention as a series of complicated mental performances which include focusing or engaging in a goal, keeping or enduring, hypervigilance in a long time, encoding features of stimulus and shifting concentration from one target to another (1). Attention is the focus and main core of cognitive psychology and includes changes in drowsiness and consciousness, awareness and decentralized consciousness of an object, phenomenon or event to centralized consciousness (2). Attention disorder may be revealed by being distracted of duty, lack of persistence, having problem in staying focused, or being irregular (3). By the same token, selective attention is the ability to continuously focus on a stimulus or a specific task and its capacity is related to the ability to shift attention and according to new findings, three neural networks have been the basis of central aspects of attention, such as: positioning, awareness and executive attention (4). Also in coincidence, the neurological maturation and development of attention that is dependent on genetic factors and the nature of the child, is dependent on a number of factors including awareness, capacity - selective processing, the level of arousal or interest (5), attention controlling (6), automatic processing, memory, motivation, self-regulation to enhance adaptation with external and internal requirements, positive and negative affective adjustments (2), and

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Received: July. 12, 2014
Accepted: Feb. 24, 2015

various environmental factors such as family and education (4). Whenever our mind is completely occupied by a question, thought or purpose, the concentration has occurred (7) and it occurs when attention has four other features including: being aware of the issue which is intentioned and having it as a goal, being focused on certain aspects of the issue, complexity and difficulty of the selective/focused attention, using individual abilities in the form of attempts, in addition to selection; so, attention is the requisite for concentration (8).

Developed criteria for attention deficit and hyperactivity in normal pre-school children are high and these behaviors are common among them (9). Children are more vulnerable to distraction and have a short attention range, so any stimulus can easily distract them (10). According to Bjoklund, although the children could not overcome the distraction during homework, they are apparently aware that what their problem is and it is an understandable issue for them (11). On the other hand, researchers have discovered the relation between focused attention and impulsion in these children (2).

The child's tendency to concentration often starts with much reliance on order or sequential information in quantitative judgments and continues to a more focused and balanced perceptional analysis of the whole issue.

So not having concentration puts the child in a state of limbo, and the cognitive abilities he has are distorted (10). Attentional, cognitive, and behavioral problems of these children have caused their conflict with social environment. They are easily disturbed and in some families, this issue may create a level of tension. (12). Researchers have mentioned different causes for this issue including: major changes occurred in biological structure of children aging from 4 to 10 years, sudden increase in frontal lobes' growth, incomplete myelin sheath (11), inadequate age and knowledge (9), non-developed neural networks of anterior cingulate cortex and pre-frontal structures, and non-increased communicational patterns with other brain structures (4). Attention training is based on the assumption that particular cognitive skills of attention are improved through frequent exercise (12 and 13). Thus, attention training will be given to children so as to cause cognitive changes. The results of various studies have shown that providing this training to improve attention in normal children and those with attention-deficit/hyperactivity disorder has a positive effect (13).

Games stimulate children's cognitive development, and by paying attention, focusing on and manipulating objects and contacting with aesthetics, children explore and experience the truth personally, and facing with reality leads them to think, and creates thinking expansion, ability and accuracy in them (12). In the field of play therapy, researchers have shown that group child-centered play therapy has caused reduction in the symptoms of attention-deficit/hyperactivity disorder (14) and external and aggression problems of children (15) and reduction in anxiety and increase in their social development (16). In this regard, another study has shown the effectiveness of child-centered play therapy on diagnostic profiles and developmental factors in homeless children. Developmental criteria and diagnostic profiles of these children have improved and their self-esteem has increased and anxiety and depression have decreased (17,18). Story telling is also a kind of indirect education and a way to increase cognitive capabilities of the child (19). According to the researchers, story plays a considerable role in calmness, increase of attention, and accuracy (20).

With respect to what has been described, it is clear that children need help and support, and if they were allowed to understand their problems, find a solution for them and do their tasks, their creative capabilities would appear and develop, so that they would solve their problems by repeating the way they have learnt. In the game room, children's behavior limitations would be applied in a way that they are allowed to control their manner personally. Because no external control is applied to children, they learn how to control and direct themselves with decision-making authority (21). The present study aimed to assess the effects of purposeful play therapy and narrative therapy and the combination of these two methods on attention and concentration pre-school children aging from 6 to 7 years.

Materials and Methods

Present research is an applied-experimental study. The Study population includes all children enrolled in preschools of Mashhad. Multi-stage cluster sampling method was used, in which a region from Mashhad Municipality areas (Zone 2) was selected and them, four kindergartens were selectively chosen. 60 children between the ages of 5.11 to 6.5 of the four centers were selected, and Wechsler preschool and primary scale of intelligence (22) was run out on these people. Children with IQ of 90 to 119 were randomly divided into four groups of 10 people and the rest of them were excluded from the study. Inclusion criteria were pre-school level 2 girls and boys with IQ of 90 to 119 and exclusion criteria

were children with average to high IQ (header) and children with moderate to low IQ. In order to comply with ethical concerns, for parents of children who participated in the study, it was explained that the children's participation in this study is completely voluntary and the company can withdraw at any stage they want to continue their research. Intervention groups were: 1. Narrative therapy group 2. Play therapy group 3. Combined purposeful play therapy and narrative therapy group 4. Control group. Test of Every day Attention for children (TEA-CH) and Continuous Performance Test (CPT) were taken from the children. The training sessions for all three groups were implemented with equal environmental conditions and again, the children were assessed by test of every day attention for children and continuous performance rest.

Research instruments

A) Test of Every day Attention for children (TEA-CH): A subjective test (pencil and paper) has been created by Manley (2001). For the measurement, three components of the independent aspects of attention including selective/focused attention, sustained attention, and attentional control/switching in children aging from six to fifteen years and eleven months have been used. The collection consists of nine sub-scales with a game-like format that includes: Sky Search, Score, Creature Counting, Sky Search DT, Map Mission, Score DT, Walk/don't Walk, Opposite Worlds, and Code Transmission. These components have special predictive effect on children's school disorder. Their product is a 13-score scale. The time to complete each sub-scale varies between 2 to 12 minutes; meanwhile the whole test takes approximately 90 minutes. The test is of "Paper and pencil type and consists of two forms: A and B, which allow us to test and retest. The required equipment for this test consisted of: a stopwatch, a voice recorder, a whiteboard marker, and an eraser - special for plastic plate. The test validity has been changing between ranges of 0.57 and 0.85 by test-retest for 55 children, between 5 to 20 days after the first run. According to the values of these three diagnostic features for this model, the test reliability has been above the threshold, (CFI= 0.97, NNFI=0.96) that all of them show that these three factors have created good proportion of executive patterns observed in a large group of children alone (23).

B) Continuous Performance Test (CPT): The test has been first prepared by Rosvold and his colleagues in 1956, with the aim of assessing sustained attention, care, vigilance and selective/focused attention and also its other purpose is impulsivity controlling (24,25). Persian version of the Continuous Performance Test is a software test performed with the help of computer. This test is composed of two sets of stimulus (Persian numbers, images) each of which is made up of 150 stimuli. From these stimuli, 30 stimuli (20 percent of the total stimuli) are target stimuli that the participants are expected to answer (press a key) when the target stimuli were seen by them. The time between two presented stimuli is 1000 milliseconds and presenting duration for each stimulus is 200 milliseconds. Variables that are obtained from immediate implementation of the test include: the number of correct answers (Correct Detection), the number of non-responsiveness to target stimulus (Omission Error), the number of responding to non-targeted stimulus (Commission Error) and reaction duration measured by millisecond (Reaction Time) (26). Validation of a version very similar to this test was made in Iran by Hadyanfar et al. efforts (27) that showed 0.59 to 0.93 validity coefficient in a 20-day retest for different parts of the test. The validity of the latest test was examined with a criterion validity method based on a comparison of normal and Attention Deficit/Hyperactivity, groups that the results of its different variables had shown significant difference in a level smaller than 0.001 between the two groups. Also, good validity and reliability have been reported for this scale (26).

After the design, the content of the sessions was approved by Department of Psychology of Ferdowsi University of Mashhad. Group play therapy during 12 sessions, 22 toys which could develop attention factors (sustained attention, selective/focused attention and attentional control/switching) were used to work with children. Children sat at the designated stations and then were trained to start the game. At each station, 8 to 10 minutes, depending on individual differences were considered, and it was in the interest of potential skill levels of children playing in the adoption of solar spectrum of this period was done. In group narrative therapy, in addition to storytelling, different books which focus on the child involved were used. In combined purposeful play therapy and narrative therapy group, a combination of both methods was used for this purpose. Data were analyzed using descriptive and inferential statistics. To describe data, mean and standard deviation were used. Multi -variable analysis of covariance was used to determine the effectiveness of combined purposeful play therapy and narrative therapy group relative to other experimental groups and the control group.

Results

The study included 40 male and female subjects aged 5 years and eleven months and six and a half years old of which 20 females and 20 males were in equal groups of 5 girls and 5 boys. Assessment of attention of children as presented in Table 1, the combination of purposeful play therapy and narrative therapy group obtained mean (9.25) and standard deviation (86.3) for sky search sub-scale, which means most of the attention. The combination of purposeful play therapy and narrative therapy group with higher scores in mean and standard deviation, respectively (18.27, 3.95) had the greatest impact on attention for the map mission subscale. This is about the ability of the dual task of sky search, score and walk/don't walk which show the influence of the combination purposeful play therapy and narrative therapy method. In attentional control/switching and code transmission subscales, the combination group is not much different than the other two groups of purposeful play therapy and narrative therapy, but it is different from the control group.

Table 1. The children's average of total scores and subscales of attention test in the post-test stage

		Sky search	Map mission	Attentional control/switching	Score	Code transmission	Walk / Don't walk	Score DT	Sky search DT
Mean	Play therapy	12.67	16.82	92.64	7.64	27.55	9.18	9.45	14.11
	Narrative therapy	11.59	16.78	96.67	6.56	28	8.56	9.11	41.90
	Combination	9.25	18.27	96.45	7.55	26.55	10.18	9.55	5.33
	control	11.67	6.300	107.50	5.20	20.50	6.40	6.80	22.72
	total	11.27	17.07	98.17	6.78	25.66	8.64	6.76	19.96
Standard Deviation	Play therapy	3.71	2.46	10.89	2.11	5.85	3.71	2.81	23.71
	Narrative therapy	5.70	3.46	20.55	2.40	6.63	2.29	3.01	3.84
	Combination	3.86	3.95	28.63	1.96	13.31	3.54	4.48	22.53
	Control	4.30	5.58	14.70	2.35	7.29	2.76	1.93	17.42
	Total	4.42	3.95	19.98	2.34	9.09	3.46	3.31	47.70

In order to use multi-variable analysis of covariance test, its assumptions were investigated. M Box-test was used to prove the consistency of the covariance intervention groups and control group. Results showed that the assumption of homogeneity was confirmed. Also F of Wilk's Lambada test was used to interpret the results. The F value is equal to 2.30, and in less than 0.05 (0.004 p) it is significant. So we can say that intervention methods were effective on attention (the effect 0.45).

In Table 2, multi-variable analysis of covariance test for examining the main effect of the attention variable and covariate variables between intervention groups and the control group in Test of Every day Attention for children showed that effect of the pre-test on post-test daily attention on the scores of the participants in the daily attention to the task is significant at the level less than 0.05. These subscales include attentional control/switching (0.04), code transmission (0.000).

Table 2. Multi-variable analysis of covariance test to investigate the main effect of attention variable and covariate variable in test of every day attention among 3 groups of children

Source	Dependent variable	Sum of squares type 111	Degree of freedom	F	Significant
Effect Group	Sky search (post-test)	81.89	3	2.62	0.06
	Map mission (post-test)	42.27	3	1.09	0.36
	Attentional control/switching (post-test)	1650.45	3	2.99	0.047
	Score (post-test)	26.93	3	2.23	0.11
	Code transmission (post-test)	409.83	3	8.92	0.000
	Walk/Don't walk	66.16	3	2.70	0.06
	Score DT (post-test)	32.11	3	2.43	0.085
	sky search DT (post-test)	128.93	3	1.65	0.19

Also the mean scores and standard deviation of concentration among children indicated in Table 3.

Table 3. The mean and standard deviation and total score of continuous performance test of post-test stage among 3 groups of children

		Post-test Commision error	Post-test Ommission Error	Post-test Correct Detection	Post-test Reaction time
Mean	Play therapy	6.82	2.09	133.36	64.82
	Narrative therapy	5.11	2.22	131.67	613.56
	Combination	3.27	3.09	135.27	657.09
	Control	5.30	6.60	133.70	673.00
	Total	5.12	3.48	133.59	648.13
Standard deviation	Play therapy	9.66	1.92	9.00	64.88
	Narrative therapy	3.65	1.79	6.46	71.76
	Combination	3.29	3.14	2.49	61.97
	Control	4.00	8.58	5.56	108.73
	Total	5.84	4.90	6.22	78.42

In order to use multi-variable analysis of covariance test, its assumptions were investigated. For this purpose, M box test was used to investigate the similarity of covariances of intervention groups and the control group. With respect to the significance of it we conclude that the assumption of covariances similarity is not approved and is called into question and this assumption is questionable and multi-variable analysis of covariance cannot be accurately performed. F value of Wilk's Lambada test was used to interpret the results. The F value is equal to 1.17, and in less than 0.05 (p =0.31) it was not significant.

Discussion

This study focuses on 40 children aging from 6 to 6.5 years of three kindergartens. Each participant was tested by test of every day attention for children and continuous performance test in two stages. The F value of Wilk's Lambada test was used to interpret the results. The F value was significant for attention increase. On one hand, the results of the multi-variable analysis of covariance test demonstrated the effectiveness of the combination of purposeful play therapy and narrative method to increase the sustained attention and attentional control/switching was significant, but the combination of purposeful play therapy and narrative method and purposeful play therapy or purposeful narrative therapy had no effect on increasing the concentration. So if kindergartens set their educational lessons based on a scientific and principled plan and emphasize more on games and stories which develop children's cognitive domain in attention and concentration factors, many of their attention and concentration problems would be reduced and their energy would be saved to be focused on learning goals. In this study, the researcher performed the education of the children continuously and with the toys used to develop attention and concentration during 12 sessions; also in the field of story, progressed by choosing and telling stories containing attentional factors. Meanwhile, storytelling process actually changes the child's attentional and concentrating potential from passive to active (By listening, the children obtain the ability to experience active listening). They even need to practice to have the sufficient attention and concentration in order to follow the story. The child should follow the story among many external and internal stimuli, pay sustained attention to the story, and have the ability to increase his shifting attention in story subjects.) Using stories in kindergartens and endurance in performing it not only to be discussed for ten sessions, but also as an active teaching method, that ideally strengthened proper and good behaviors which would increase their attention and concentration domain by participation of children in education in order to focus on the task and do it carefully.

In this regard, much research has been done in the field of attention deficit and hyperactivity disorders (28) and researchers have used different methods to raise the attention of children, including: Meditation (29), attentional behaviors training, self-regulation strategies training (30), motivational behaviors and self-learning, pharmacotherapy, complementary trainings and methods of storytelling, cognitive behavior modification, and logical graphic functions and choosing appropriate novels for learning (31), relaxation method (32), music therapy (33) and yoga (34). Enhancing the effect of cognitive training on attention and behavior, assessment of attention, also on improving learning in the classroom and reviewing the attention and vigilance in sensitive activities such as guiding an aircraft has many applications. The effect of educational games that focus on reducing the symptoms of attention deficit hyperactivity disorder of the combined type has been effective (35), but did not affect the project

been effective (35), but did not affect the project intervention.

According to this study, the effect of the combination of purposeful play and narrative therapy is targeted at non-clinical sample, limiting the generalization of the results to clinical and normal samples. Doing more research with larger sample sizes and more focused on clinical and normal samples in order to achieve a pattern which fits the norms of Iranian Children will resolve this limitation. Also the level of attention problems and concentration of children is below the threshold of clinical attention, which limits the generalization of the results.

Broader focus on children with attention problems and comparing them with normal children can be made.

Conclusion

According to the results, purposeful play therapy and narrative therapy as attractive and educational tools can promote attention factors and prevent to attention defects among children.

Acknowledgement

This is extracted from master thesis and it approved by research committee of Ferdowsi University of Mashhad. This research conducted without any financial support and the authors had no conflict of interests with the results. Hereby special thanks are given to all those who have helped the researchers.

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