

Effectiveness of Expressive Art Therapy Group to Reduce Stress Level in Mothers of Children with Neurodevelopmental Disorders

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Abstract—Children with neurodevelopmental disorders often need intense help or assistance in carrying out their daily activities. Children’s difficulties in communication, socialization, certain characteristics, and maladaptive behaviors become the frequent stressor factors. Consequently, mothers who are responsible to nurture children with neurological development disorders are prone to experience continuous stress, in their life. The continuous stress experienced by mothers lead to variety of negative emotions. Many studies emphasized on the importance of paying special attention to mothers’ stress. However, interventions concerning the stress experienced by the parents, especially mothers are still insufficient. This quasi-experimental research with one group pretest-posttest design aims to prove the effectiveness of expressive art therapy group to reduce participants’ stress level. The participants in this study were six mothers, that have direct involvement in daily nurturance of children with neurodevelopmental disorder. Differences in stress levels were evaluated based on the pretest and posttest scores, using the Perceived Stress Scale-10. The result of the statistical test proves that seven sessions of expressive art therapy group is effective to reduce the stress level of participants. Additionally, the intervention provides opportunities for participants to release their emotional tension, explore themselves, express their emotion, identify their challenges, find solutions and insights. In the end, participants are able to change their responses and reactions in a positive way and improve their interpersonal relationship.

Keywords: *stress, mothers, neurodevelopmental disorders, expressive art therapy*

I. INTRODUCTION

Based on cross-country studies, parents especially mothers of children with neurodevelopmental disorders, such as autism spectrum disorder, experience more psychological stress than parents with typically developing children [1][2][3][4]. Mostly, mothers have greater commitment and nurturance responsibility for child care [2]. Hence, mothers are prone to experience continuous stress which causes frustration, emotional exhaustion, and social problems [5]. Child’s difficulties in communication, socialization, certain characteristics, maladaptive behaviors,

and financial problems are confirmed to be the common stressors [6].

The stress experienced by mothers has negative impact on their physical and mental health [7], success rate of their children’s interventions, and might lead to child’s neglect and violence [3]. Literatures review conclude that it is important to give psychological support for family members, especially those with direct involvement in child’s nurturance, to reduce their stress level [1][7][8][9]. Cognitive reappraisal should be the foundation for the Prevention and intervention program. It is expected to reduce stress, enhancing the emotional regulation and well-being of parents [10][11]. In the essence, intervention for stress should concern on the subjective experience of stress [12].

Reference [13], define psychological stress as an emotional reactions toward situational context, which is perceived as exceeding the individual’s resources. Stress is the result of the transactional process between the individual and her life situation. Individual experience of stress is subjective, and is determined by the environmental factors, antecedent factors, and mediating process (primary appraisal, secondary appraisal, and coping).

Expressive art therapy is one type of psychological intervention using integrated art modalities such as, dance or movement, music, drama, poetry, visual art, writing, meditation, etc, to foster emotional healing, resolving inner conflict, and awaken individual creativity. The healing process occurs when one can express and integrate their mind, body, and emotion, herself through images, color, form, and symbols [14].

Carl Rogers, the father person-centered approach belief that every individual is worthy, has potential and capacity for self-direction. Through acceptance, empathic listening and respect, one can find feel free to express self, unleash the unconscious mind into creative forms and find his/her own solution. By listening to one’s explanation of his/her creation in concrete form, or by hearing the sound/music being created, therapist can see how one’s think and feel about the situation [14]

Conceptually, the therapeutic process involved three stages of the expressive therapies continuum (ETC). All stages work continuously horizontally and vertically. The physical experiences, imagery formation are expressed in the kinaesthetic-sensory stage. The spatial and emotional process are expressed in the perceptual-affective stage. The cognitive restructuring, meaning, insight, and coping are expressed in the cognitive and symbolic stage. The therapeutic process occurs when the individual can integrate their body and mind as one [16][17]. Psychotherapy group are able to facilitate positive things such as self-recognition, self-acceptance, social support, opportunity to learn from others [18], and positive emotion [19]. The main purpose of this study is to evaluate the effectiveness of seven sessions of person-centered expressive art therapy group on reducing stress levels in mothers who have children with neurodevelopmental disorders. More, is to seek for the therapeutic process occurring in each group session.

II. METHODS

A. Design

Toward the research goal which is to seek for the effectiveness of expressive art therapy group, the quasi-experiment method is used. Within subject, one group pretest-posttest design, is ideal to evaluate the effectivity of an intervention [20]. The participants were gathered as one group without any controlled group.

B. Procedures

University ethic's review were submitted preceding the information sent to private special needs schools and other child centers in Tangerang area. Researchers gave explanation about the research purpose to teachers in the school. Afterward, three mothers voluntarily joined the program and the other three were recruited using snowball sampling. Ethical considerations were ensured throughout the intake period, group sessions, toward data analysis and presentation.

The first individual session was held to attain the informed consent, pretest stress score, demography information, and several open-ended questions on how the participants appraised their stress experiences. Besides biographical data information, participants gave information about the budget spent for education and therapy, exclusive time spent for the child by the mother and father. At the end of the seventh session, the posttest stress score and how the participants reappraised their stress were obtained.

C. Participants

Convenience and snowball sample of six mothers aged between 33 and 41 years (μ age=37.5 years). Each has a child diagnosed with neurodevelopmental disorders, have commitment and direct involvement in child's daily nurturance. Based on the Perceived Stress Scale-10, the stress range of the participants are between 22 and 24 (μ =23.5). Participants have bachelor degree and similar ethnic background. All were participated in all group sessions.

The children (3 boys and 3 girls) aged between 5 and 14 years (μ age=8 years). Three children have been diagnosed

with Autism Spectrum Disorder (ASD). Two children diagnosed with Sensory Processing Disorder (SPD) and atonic seizure. One child has no formal diagnosis, but concluded with having autism characteristics, based on the evaluation of the teacher and therapist using Childhood Autism Rating Scale (CARS score=37). Three children have severe communication ability, and two have limited verbal communication ability.

D. Program

The expressive art therapy group program elaborated the suggestions from preceding studies, comprised of counselling group to develop positive coping strategies [7], individual perception, the experience of stress and capability to handle situation [12] emotion regulation strategy and cognitive reappraisal [11][14], applied the experiential learning methods to facilitate experiences that deliver positive emotions, such as hope and gratitude. The research summary is presented below.

Researcher is also the facilitator for the whole series of expressive art therapy group. The facilitator hold the structure of the whole series of group sessions in person-centered principles. Each group session was ran for 120-150 minutes, with consistent routine. The routine starts with a group agreement, check-in, individual expressive art activities and reflection, and closes with the insight gained. Participants participated in all sessions.

E. Measures

There are two kind of measures used in this research. To attain the research's objective, the Perceived Stress Scale-10 (PSS-10) is used to measure the participant's stress scale, before and after the intervention. The current stress scale is a single question refers to the present stress intensity.

1) *Perceived Stress Scale-10*: In 1983, Cohen, Kamarck, and Mermelstein developed Perceived Stress Scale-14, which consists of 14-items [21]. In 1988, the scale was simplified into Perceived Stress Scale-10. PSS-10 consists of 10 items self-report questionnaire that assesses individual's perception toward stress that they have experienced in their life situation as unpredictable, uncontrolled, and exceeding their internal and external resources. PSS-10 consists of two dimensions, there are 4 positive items in the dimensions of perceived self-efficacy and 6 negative items in the dimensions of perceived self-helplessness. The positive items should be reversed before counting the whole score as unidimensional [23].

The responses scale ranges from "0=never" to "4=very often". The total score indicates the stress intensity, higher stress score as higher stress level [22]. In this research, the stress level are classified as 0-7=very low stress, 8-16=low stress, 17-23=medium stress, 24-32=high stress, and 33-40=very high stress.

The translation into Bahasa Indonesia was conducted by a sworn translator institution and judged by three experts in psychology and an expert in psychometry, which resolved any inconsistencies in translation. In various studies, the alpha Cronbach ranges between, α = .70 and .92. The test-retest reliability in a day interval is .86, in two weeks is .77 and in a year is .61 [23].

2) *Current Stress Scale*: There are two kind of measures used in this research. To attain the research’s objective, the Perceived Stress Scale-10, is used to measure the participant’s stress scale, before and after the intervention. The current stress scale is a single question refers to the present stress intensity.

III. PROGRAM

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1) *Session 1*: The modalities used in the first session were storytelling and synthetic white clay. The purpose of this session was to facilitate the process of self-exploration and finding strength. Participants were asked to create a bowl that represent their self

2) *Session 2*: The modality used in the second session was acrylic paint. The purpose of this session was to facilitate the process of deeper self-exploration and self-recognition. Participants were asked to paint the inner and outer side of the bowl they have created.

3) *Session 3*: The modality used in the third session was natural clay. The purposes of this session were to identify the source and the form of their anger, biologically, physically, emotionally, and to recognize their needs. Participants were asked to re-experience their anger, release their emotional tension, and to let go of their anger.

4) *Session 4*: The modality used in the fourth session was pencil colour or crayon. The purpose of this session was to change their respond or reaction toward certain stress experience that lead to various negative emotion, besides anger. Participants were asked to draw their experience of stress and enquiry was used to represent the stressful situation.

5) *Session 5*: The modality used in the fifth session was acrylic paint. The purpose of this session was to enhance their resiliency and coping strategy. Participants were divided into two groups and each group presented their knowledge about resiliency. Participants were asked to draw her own view about resiliency, inside a circle.

6) *Session 6*: The modalities used in the sixth session were natural stones, acrylic paints, and varieties craft accessories. The purpose this session was to reappraise their perception about varieties of negative emotion that elicit stress. Participants were asked to convert the stones which

represent their negative emotions into something positive. For this particular activity, participants were given the instruction to prepare the creative materials, in prior.

IV. RESULT

A. Perceived Stress Measurement and Review

The stress scores obtained using The Perceived Stress Scale-10 were calculated with SPSS.23, and tested with wilcoxon signed rank test. The result presented below. Negative rank $Z=-2.731$, indicates the posttest score is lower than the pretest score. The significant value of $p= .026$, $p <.05$. The result is significant, it supports the research hypothesis and objective. Expressive art therapy group is effective to reduce the stress level of mothers of children with neurodevelopmental disorders, who have direct commitment of nurturance, every day “Fig.1” .

Mean score difference of the pretest and posttest support the research hypothesis and provide more insight of the stress situation. The group score mean obtained before group session was $\mu=23.16$, considered as high stress. The group score mean after seven group sessions was $\mu=14.8$, considered as low stress “Fig. 2”.

The stress scores of participants B, C, and D were higher than other participants. Based on the interview and direct observation toward the children, it appears that their children have severe communication skills. There is an indication that children’s communication skill affects the stress level of the participants.

Referring to the negative item (perceived self-helplessness) and positive items (perceived self-efficacy), it is found that posttest scores of the positive item of participant B and C only decrease just by one point, while participant D increases 2 points. This condition indicates that these expressive art therapy group sessions make improvement of self-helplessness, but need further study in term of improving self-efficacy.

The posttest and pretest scores difference of participants D, E, F were higher that participant A, B, C. There is an indication that time spend by the fathers for the children, affect the stress level. The posttest and pretest scores difference of participant E and F were higher than other participants. Both have children ≥ 10 years, while others have children between 5-7 years. There is an indication that children’s age, affect the stress level. However, further studies are needed to confirm the truth of these indication

TABLE I. WILCOXON SIGNED RANK

	Post-pre
Z	-2.731
Significancy (2-tailed)	0.026

Fig. 1. Pre and post Test Significancy

TABLE II. PRE AND POSTEST STRESS SCORES

Stress Score	A	B	C	D	E	F	μ
Pretest	22	22	24	24	24	23	23.16
- item	14	15	14	18	16	15	
+ item	8	7	10	6	8	8	
Posttest	16	16	18	15	11	13	14.8
- item	12	10	9	7	7	10	
+ item	4	6	9	8	4	3	

Fig. 2. Pre and posttest stress score

B. Current Stress Measurement and Review

Simple measurements of the individual current stress level, were obtained at the end of the session 2, 3, 4, 5, and 7 “Fig.3”. The difference between the mean of the current stress pretest and posttest score is 2.2 point.

TABLE III. CURRENT STRESS SCORES

Session	A	B	C	D	E	F	μ
Pretest	6	5	6	3	3	8	5.16
Session 1	-	-	-	-	-	-	-
Session 2	3	0	7	3	3	3	3.16
Session 3	2	5	4	2	2	0	2.5
Session 4	3	5	5	8	2	2	4.16
Session 5	2	3	4	6	2	2	3.16
Session 6	-	-	-	-	-	-	-
Session 7 (Posttest)	1	3	3	2	2	0	1.83
μ group (exclude pretest)							2.962

Fig. 3. Current stress scores

TABLE IV. CURRENT STRESS SCORES MEAN AND THERAPEUTIC MODALITIES

Session	μ Group Stress	Program	Therapeutic Modalities
7	1.83	Gratitude tree	Twigs
3	2.5	Anger transmutation	Natural (brown) clay
2	3.16	Inner and outer self-exploration	Acrylic paint
5	3.16	Resilience mandala	Acrylic paint
4	4.16	Transformation	Pencil Color or Crayon
1	-	Inner self-exploration and finding strength	Synthetic clay
6	-	Changing stones	Natural stones

Fig. 4. Current stress scores mean and therapeutic modalities

During the interview, all participants stated that they were in a stable life situation without any urgency or tension from the children. During the interview, participant D claimed that her current stress level could reach level 10, when her child is showing tantrum. In session 4, her child experienced heavy tantrum for a week, but her current stress

level was 8, instead of 10. This indicates that expressive art therapy group can improve personal resiliency. In this research, participants’ current stress score’s fluctuation is related to situational factors, which are children’s health and maladaptive behaviour, and external support system.

A review comparing the group current stress scores mean and therapeutic modalities used in this research “Fig. 4”, lead to an indication, that natural therapeutic modalities used in session 7 and 3, have greater therapeutic effect than other therapeutic modalities. Acrylic paint used in session 2 and 5 have greater therapeutic effect than pencil colour or crayon used in session 4.

Based on the observation, during session 1, 3, 6, 7, participants seemed to make a lot of movement. Whereas in the closing session, participants chose session 6 and 7 as their favourite sessions. These indicate that movement and positive psychology might promote a decrease in participant’s stress level. Meanwhile, during the creative process, participants seemed to experience flow in the process of creating and focusing on the here and now situation. Flow experience increases well-being, and then it will improve self-perception, interpersonal relationships, and changes their perspective.

B. Therapeutic Group Review

Besides personal growth, there are commonalities in the group therapeutic process experienced by the participants. Expressive art product and reflection of one of the participants will be attached underneath the group’s review session, to represent the therapeutic process.

1) *Therapeutic Review Session 1:* Through the process of making bowls, participants able to experience self-exploration and get an awareness of their weakness and strength.

“I find myself impatient. I want to quickly end the problem, and eventually it doesn’t end and I will think about that for days”

2) *Therapeutic Review Session 2:* Through the process of painting bowls, participants were able to experience deeper self-exploration. They were able to identify their challenges, stress sources, their needs, their sources of joy, finding hope, and their self-potential.

“I need to be strong, optimistic, patient, and cheerful. Live in peace, with honesty, and be kind towards family and others. I hope my family feel confident, proud, and worthy as a family”

3) *Therapeutic Review Session 3:* Through the process of anger transmutation, participants were able to lift up their unconsciousness of anger into concrete form. This experience enables them to recognize the form of their anger, biological changes, form and position of their body when angry, the root of their emotional tension, psychological needs, and positive insights for themselves.

“I tend to be implode, mostly I am angry when my child is having tantrum. I try to hold my anger and repeatedly saying ‘I have to hold myself’. When I’m angry, I feel pain and heat in my upper head, my body heat up and feel anxious. I want to stand up, scream, and throw something. Without anger, I feel calm and happy. My body and head feel light. Through this process I learn that when facing difficulties, especially my difficult child, I need to stay calm and doesn’t get provoked by the situation”

4) *Therapeutic Review Session 4:* Through the process of transformation, participants were able to change their responses/reaction toward certain experience of situation that provoke their negative emotions. Participants manage to identify their negative emotion and activate their executive function of cognitive restructuring and finding solution.

“I wonder whether I can provide the best facilities and patience for my child. I’m scared and sad about my child’s future. I want to spend more time with my child, soothe him, find personal therapies, arrange activities, find and develop his talent.”

5) *Therapeutic Review Session 5:* Through the process of learning and drawing the resiliency, participants were able think about the positive changes to improve their personal resiliency. In common, they consider to enlarge their external support and relationship.

“I feel that others perceive my child as useless and have no future, but I believe that my son has special gift that I need to find out. I need to be optimistic and positive. I see myself as a smart person, able to think positively, and productive. I can play with my children”

6) *Therapeutic Review Session 6:* Through the process of changing the stones of negative emotions, participants were able to see their difficulties from different perspective and think positively. Participants reported having experience of me time, focused in the here and now moment, and relaxing.

“I feel happy and calm, and experience me time. I can focus on the process without thinking of anything else. I find out that sticking the stones are not as easy as I think. Like in my life, I have lots of dreams but they are not easy to be attained.”

7) *Therapeutic Review Session 7:* Through the process of making gratitude tree, writing their blessing and the name of people supporting them, participants were able to have an awareness of the importance of gratitude in their life and experience feeling of relaxation.

“When I think of people that make me happy, I feel happy and relaxed. Being grateful makes me feel happy. I’m grateful of loving and giving attention to my family. I need to have empathy to others who suffer more and be grateful for all of His blessing.”

C. Perception of Stress

In this research study, stress refers to subjective perception on how ones perceive their life situation as uncontrollable, unpredictable, and exceeding their capacities. The perception of stress before the intervention describes how participants depict their experience of stress before having seven sessions of expressive art therapy group.

1) *Perception of Stress Before the Intervention:* Participants perceive their experience of stress in their life context occurs continuously, and it drained their psychological resources. Participants experience emotional exhaustion, as they are mothers of children with neurodevelopmental disorders. Participants are caught in anger, disappointment, and at high risk to do violence against the children, neglect them, or drowned in sadness.

“When my child is having tantrum and out of control, I will get angry and emotional.”

2) *Perception of Stress After the Intervention:* Participants perceive their experience of stress as something inevitable, and indeed as part of their life. However, participants are able to minimize the impact of stress by seeing their difficulties from a different perspective and think positively. Further, participants reported positive relationship improvement in their family life.

“I believe that there will always be a positive side for the difficulties that I have experienced. I feel more positive, relaxed, and optimistic. My changes makes my family happier and more peaceful.”

V. CONCLUSION

The research results show that expressive art therapy group with person-centered approach, is effective to reduce the stress of mothers of children with neurodevelopmental disorders who experience continuous stress in their daily life. In the psychotherapy group with person-centered approach, participants experience acceptance among group members and freedom to explore themselves and express their emotions through visual forms and reflection, without any judgement. Participants naturally learn from each other and listen with empathy.

Conceptually, the therapeutic process occurs as in the expressive therapy continuum stages. The therapeutic process naturally occurs when the kinesthetic-sensory, perceptual-affective, cognitive-symbolism parts of the brain are activated, and experience body and mind integration. Practically, through acceptance, empathic listening, and respect, one can find feel free to express self, unleash the unconscious mind into creative forms and find his/her own solution. Seven sessions of expressive art therapy group, enable the participants to recognize their weakness, strength, potential, difficulties, stressor, sources of joy, and positive changes in their perspective. Additionally, this intervention facilitate self-growth, cognitive restructuring, positive

emotions, and improving the interpersonal relationship of the participants.

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