International journal of child development and mental health
ISSN: 2286 - 7481; E-ISSN: 2586-887X *Vol. 7 No. 2 July – December 2019 (41-54)*

Effect of the Satir Model – Based Psychoeducational Program on Parents and Children with Autism Spectrum Disorder

Soontaree Srikosai[1*], Patarawadee Dornnork[1], Chulaporn Somchai[1], Peungpid Sriseub[1], Siriwan Taweewattanaprecha[1,2], Ratana Saipanish[1,2,3]
[1]Rajanagarindra Institute of Child Development, Department of Mental Health, Thailand
[2]Satir Association for Human Development and Psychotherapy, Thailand
[3]Department of Psychiatry, Mahidol University, Faculty of Medicine, Ramathibodi Hospital, Thailand
[*]Corresponding author: Soontaree Srikosai Email: s.srikosai@gmail.com

Received: 31 July 2019
Revised: 30 September 2019
Accepted: 18 November 2019

Abstract

Parents who have a child with autism spectrum disorder (ASD) have constant negative emotions associated with their child's self-care, social skills deficit, and self-regulation difficulties. This study compares the clinical symptoms and medical compliance of children with ASD, and the life congruence and stress of parents who participated in a psychoeducational program based on the Satir Model (PPSM) and those in a standard educational program (SEP). A randomized controlled trial design was conducted. The experimental group of 26 parents of ASD children attended the PPSM, and the control group of 23 parents attended the SEP. Data was collected using the Vineland Adaptive Behavior Scale (VABS), Patient drug compliance questionnaires, Life Congruence Scale, and Parenting Stress Index-4-SF. The mean age of the 49 participants was 39 years old. Compared to the control group, the clinical symptoms of ASD children in the experimental group were better than the control group at $week_{28}$ follow up (mean difference = 13.46, $p<0.05$); and the percentage of drug compliance in the experimental group was better at post-test (mean difference = 5.26, $p<0.05$). Parental stress scores between groups were not significantly different at each follow up interval. Experimental group stress scores were reduced at $week_{16}$ ($p < 0.05$) and $week_{28}$ follow up ($p < 0.01$). Control group stress scores were reduced at post-test ($p<0.05$). Furthermore, the experimental group reported better results on the Life Congruence Scale at $week_{8}$ follow up (mean difference = 11.54, $p<0.05$). The Satir model-based psychoeducational program helped parents of children with ASD to be more congruent and less stressed, which consequently improved clinical symptoms and the medical compliance of their children.

Keywords: Autism, Parent, Psychoeducation, Satir model

Introduction

Autism Spectrum Disorder (ASD) is a mental disorder often found in children. ASD in children is related to a malfunctioning of the nervous system in the brain, which causes disordered emotional, social and behavioral development (American Psychiatric Association, 2013). Three major symptoms of ASD in children include: (1) social communication deficits (pragmatic language disorder), such as avoiding eye contact and looking at others' faces, not

responding when their name is called, as well as difficulty pointing to a desired object; (2) receptive/expressive language disorders, such as overall delayed development, difficulty comprehending spoken language, as well as delayed and/or disordered expressive language, often characterized by repetitive words/phrases and prosodic abnormalities; (3) unusual behaviors, including improper repetitive physical behaviors and the preference to be disengaged from others in their environment (Centers for Disease Control & Prevention, 2012; Barkley, 2002; Simsek & Koroglu, 2012).

In 1995, it was estimated that there were 188,860 Thai children 0-18 years old with ASD. Ten years later (2005), ASD prevalence in Thai children 0 – 5 years old was estimated at 0.10%. A recent study in 2014 measured the prevalence of ASD in Thai children as being between 0.6 -1 % of children 0-18 years old (Department of Mental Health, 2015). In the Thai hospital system, ASD is the second-highest patient population in outpatient departments and the most prevalent diagnosis in inpatient departments of child and adolescent psychiatric hospitals/institutions, such as the Rajanagarindra Institute of Child Development (RICD). Clinical symptoms of children with ASD affect their daily living, learning ability and social interaction, which causes parents stress, anxiety, and depression (Barkley, 2002). According to Thai research in 2003, a total of 70% of all patients with ASD had comorbid mental retardation, 20% had epilepsy, and 16% were mentally ill with some cases requiring lifelong care (Siriratlakha, 2005). Additional symptoms of children with ASD include the inability to concentrate, the tendency to misbehave more than usual, restlessness, and impulsivity. These symptoms have been reported to occur continuously for at least 6 months, usually before the age of 12 years (Charatch arungkiat & Wacharasindhu, 2013). A study by Simsek & Koroglu (2012) found that parents of children with ASD reported anxiety, regarding who would care for their children, if they or other family members died. Their anxiety stemmed from the realization that their ASD children are not only stigmatized by society but also have limited problem-solving skills necessary to meet their basic needs and to function independently. Additional research findings indicated that parents of children with ASD or delayed development feel unsettled, and are more at risk of having mental health problems than families with normal children (Gurian, 2003). Also, this may affect the depression of parents, particularly mothers, who may react negatively towards their children in a violent manner, be too strict, blame or use violence in disciplining the children and may not provide sufficient stimulants for their child's development (Simsek & Koroglu, 2012).

Medication is used as the first option in treating the effects of ASD in children and has good clinical results. However, there are frequent side effects, such as headaches and lack of appetite, which can cause a lack of cooperation in taking medication (Adler & Nierenberg, 2010; Hodgkins, Sasané, Christensen, Harley, & Liu, 2011; Hugtenburg, Witte, & Heerdink, 2006). Using only medication may limit the children's development of problem-solving ability in different areas (Antshel, 2015). Parents play a very important role in monitoring and stimulating the children's development, as well as teaching them daily living skills which will enable them to help themselves. Thus, psychoeducation is necessary for parents to better understand how to deal with their children more appropriately. Providing psychoeducation for parents of ASD children is very feasible. It can improve the parents' knowledge and understanding of how to treat their children and can also create changes in clinical symptoms and their children's behavior. A total of 7 study cases met the selection criteria. The study revealed the following positive outcomes of implementing psycho education: (1) child and adolescent patients improved their behavior, (2) parents and family were content, (3) the children were able to express their opinions concerning their experiences in taking medication and how to encourage cooperation in taking medication (Montoya, Colom, & Ferrin, 2011). Providing parents with psychoeducation helped them to understand the symptoms of their children's illness, increased their satisfaction with the services provided and had a positive effect towards changing their children's behavior. However, there were limitations in regard to

providing parents with mental support, which pointed to a need for mental support along with psychoeducation. Providing mental support for parents would help them to maintain emotional balance and have life congruence which is crucial for continual and appropriate care of their children. This would encourage the children's development to reach its full potential and would also be an emotional model for the parents. Previous studies (Srikosai, Dornnork, Tawee wattanaprecha, & Saipanish, 2018) have shown that parental psychoeducation, together with mental support, lead to significant improvements in the mental development of their children and adolescents. The aim of parent education and support was to improve relationships between parents and their children using several techniques, so that parents would not only have better knowledge and understanding of their children's conditions, but also the ability to maintain their psychological congruence. The Satir Model is therefore a compatible choice regarding the mental condition of parents of ASD children, as it is a systematic form of mental therapy which uses the metaphor of an iceberg to represent a person's mind, consisting of six levels including self, yearnings, expectations, perceptions, feelings, survival coping stances, and behaviors. The goal of the Satir Model is to help parents change their internal worldview by connecting with their life force and fulfilling their yearnings, which will lower their expectations of themselves and others, resulting in a realistic perception of self and others, leading to increased contentment (Satir & Baldwin, 1983; Satir, Banmen, Gerber, & Gomori, 1991). The researchers wished to encourage life congruence in the parents of ASD children by using the Satir Model-based psychoeducational program enabling parents to have more congruence and less stress, which would, in turn, improve the clinical conditions of their children.

Objectives

1.) To compare the clinical symptoms and the percentage of medical compliance of ASD children of the group of parents who attended the Satir Model-based psychoeducational program, with the group who attended the standard educational program.

2.) To compare the level of life congruence and the stress index of parents who attended the Satir Model-based psychoeducational program, with those who attended the standard educational program.

Research Hypothesis

(1) The clinical symptom level of the ASD children, after their parents attended the Satir Model-based psychoeducational program, was better than the group of children whose parents attended the standard educational program.

(2) The percentage of cooperation in the taking of medication by children with ASD, after their parents attended the Satir Model-based psychoeducational program, was higher than the group of children whose parents attended the standard educational program.

(3) The score of life congruence of parents who attended the Satir Model based psycho educational program was higher than that group of the parents who attended the standard educational program.

(4) The stress index score of parents after attending the Satir Model-based psychoedu cational program was lower than the group of parents who attended the standard educational program.

Materials and Methods:

A randomized controlled trial design with an experimental group and a control group. The volunteers knew which program they were attending, regarding the standard educational program and the PPSM, but did not know whether they were in the experimental group or control group. The data collector did not know which group each person was in, consistently with the randomized controlled trial-double blind design

Population: Parents of children 4-12 years old who had been diagnosed with ASD and came for outpatient/inpatient treatment at Rajanagarindra Institute of Child Development between the months of November 2016 and February 2017. Those receiving treatment two times or more, were required to receive

a stable dose of medication for ≥ 3 months. Research sample: Parents who voluntarily applied to join the research project with inclusion and exclusion criteria as follows:

• ***Inclusion criteria:*** 25-65 years old, able to communicate in Thai and the primary caretaker for an ASD child living in the same family.

• ***Exclusion criteria:*** Those who presented with psychological symptoms of being unable to control themselves or unable to concentrate when communicating. Those undergoing psychosocial intervention with a specialist, such as cognitive behavioral therapy, mindfulness therapy or stress management therapy, and were unable to attend 6 times during the full program.

• ***Discontinuation criteria:*** Displayed psychological symptoms during program participation.

Random assignment: The researchers organized the sample groups into the experimental group and control group by random assignment using lottery sampling.

Sample size: The sample size was set using an effect size of 0.80, power of test of 0.80, and a test for confidence level of 0.05, to obtain sample groups of at least 25 persons per group with a total of 50 persons (Polit & Beck, 2004).

Trial Location: Outpatient and Inpatient Departments of Rajanagarindra Institute of Child Development, Chiang Mai, Thailand.

Research tools

1) The tool used in experiments: The psycho educational program based on the Satir Model (PPSM) which lasted 60 - 75 minutes, once a week, continuously for 5 sessions, with the 6th session in the third month of follow up. The content of the program was to provide psycho education for parents of children with autism, either individually or as a family. Elements of the Satir Model - Based psychoeducational program include:

Session 1 Providing parents with information, knowledge, and understanding concerning symptoms, cause, and treatment of autism, as well as helping to manage their emotions and feelings at that time.

Session 2 Exploring the iceberg to feel positive energy (part 1) by looking at how the symptoms and behaviors of their children affect the parents' minds, helping them to understand that they can be content while caring for their children, and practicing using iceberg questions to explore their internal world.

Session 3 Exploring the iceberg to feel positive energy (part 2) by helping parents to have a better understanding of themselves and knowing how to recognize their negative feelings by learning to ask themselves questions, which will help them to deal with psychological impacts, and practice using iceberg questions to explore their iceberg.

Session 4 How to balance relationships (part 1) by exploring relationship patterns of parents and others during conflicts, and exploring the effect of usual reactions to situations, which cause problems.

Session 5 How to balance relationships (part 2) by exploring relationship patterns of parents when having problems with other people. Reviewing the form of communication which causes misunderstanding, or helping form communication skills that are clear, specific, direct and honor self and others.

Session 6 Self-care. Reviewing and emphasizing parents' mind development through group activities of 6 - 8 persons, and letting them share their experiences in dealing with their children to encourage self-care awareness.

The Standard Educational Program (SEP)

provides parents with knowledge, under standing and psychological support. Each session was 45-60 minutes, once a week for 5 weeks. Elements and content of the program included: Session 1 Providing parents with information, knowledge and understanding of symptoms, cause, and treatment of autism/ hyperactive disorder, as well as helping to manage their emotions and feelings at that time. Sessions 2, 3, 4, and 5 explored the problems and provided information. Both the experimental group and the control group received the same ASD booklet. PPSM and SEP were both discussed in terms of construct

validity, as well as possibilities of clinical application. The researchers in the experimental group and the reseach assistants in the control group received training in both programs before implementation and gained clinical experience prior to conducting this RCT study.

1.2) Tools used for gathering data included:

1.2.1) The Satir Model-based life congruence test. The Thai version had 7-level answers including slightly agree, agree, strongly agree, no opinion, slightly disagree, disagree, strongly disagree. The test was designed by Soontaree Srikosai, Siriwan, & Taweewattanaprecha (2012) to be used with those 15 years old and above, and to be completed in 5-10 minutes. There are 21 questions, which can be self-rated or used in an interview, with a score range from 21 to 147. (Score ≥ 131 = most congruent, score of 109-130 = congruent, score of 87-108 = fairly congruent, score of 65-86 = quite less congruent, score of 43-64 = less congruent, and a score of 21-42 = lease congruent). Conduct reliability testing of the tool using the test -retest-stability method, 2 weeks apart, with 10 parents who had similar characteristics to the study group. Pearson Correlation coefficient = 0.92

1.2.2) Parenting Stress Index 4th Edition Short Form (PSI-4-SF) created by Abidin (2012) was used for parents with children aged 1-12 years old. It aims to evaluate parents' and children's problems and takes between 10-15 minutes to answer the 36 questions. The parents provide information by themselves, or through interviews if they have poor reading skills. The researchers requested permission from the owner of the PSI-4-SF original version to translate it into Thai and then do a reversal translation back into English to check the structural accuracy of the tools by using a Confirmatory Factor Analysis. Data analysis found 3 elements that matched the original tools, including (1) parental distress, (2) parent-child dysfunctional interaction, and (3) difficult child. Internal consistency testing showed Cronbach's alpha coefficient = 0.86

1.2.3) Questionnaire on co-operation in taking medication, which was created by the researchers. It was composed of 2 questions: 1) The number of pills or amount of medication (solution) that the child has to take per month. 2) The number of pills or amount of medication (if liquid) that the child has taken in the past month. The accuracy of the content validity of the tools was checked by six professionals and content validity index of total content (S-CVI) = 0.90, content validity index of each item (I-CVI) = 0.90

1.2.4) Questionnaire for sample group information which included gender, age, level of education, occupation, average family income per month, relationship with the child, time spent caring for the child, illness, number of children/grandchildren and age of children and grandchildren. The Questionnaire for sample group information included questions on gender, age, level of education, occupation, average family income per month, relationship with the child, time spent caring for the child, illness, number of children/grandchildren and age of children and grandchildren The Method of collecting data included.

(1) A research assistant, a healthcare staff member, who had been trained in the usage of data collection tools and did not know whether the sample was in the experimental group or sample group, collected data before the experiment (baseline).

(2) A research team who used the Satir Model-based psychoeducational program for parents of ASD children, which was created by the team of researchers, and consisted of six sessions of 60 – 75 minutes each. The first five sessions were with individuals once a week, while the sixth session was with the groups (booster dose) starting on the 3rd month of follow up. The other team of personel working at the inpatient and out-patient departments used the standard educational program (SEP), which refers to providing knowledge, advice and psychological support for parents of ASD children, and consisted of 5 sessions lasting 45-60 minutes, once a week.

(3) The research assistant then collected data 4 times after the experiment, in the 4th week immediately after completion of the program,

and followed up in the 1st, 3rd, and 6th months, without knowing which group the samples were in.

Research Validity importance was emphasized by the researchers by controlling (internal validity) this research as much as possible, by preventing or decreasing bias of four major areas that may occur in experimental research (Spieth et al., 2016). Selection bias was prevented by using a lottery draw to select samples for the experimental or control groups.

Performance bias was prevented by increasing the sample group by 20 percent, with each sample group comprised of 33 persons. In the case of adherence or dropout, there would be sufficient data for study and analysis. The percentage of parents joining this project was acceptable throughout each follow up as follows. Detection bias was prevented by evaluating experiment results using a double-blind format, namely, the data collector did not know whether volunteers were in the experimental or control groups (blind assessor) and similarly, volunteers did not know what group they were in. However, they knew of the lottery draw assigning them to either the Satir based psychoeducation program or the standard educational program (blind patient).

Attrition bias was prevented from loss of samples, for one reason or another, by using the data of samples who dropped out or could not be followed up after the post-test and applying the intention to treat analysis procedure. This refers to the sample groups which had been randomly chosen for the experimental or control groups, after completing the program's 5 sessions and had already been evaluated in the post-test. In the cases of dropping out of the project, needing to stop participation in the program, or where follow up couldn't be done, these were also evaluated in $week_4$, $week_8$, $week_{16}$, and $week_{28}$. Also, to prevent "diffusion of treatments" affecting the validity of the research, the two sample groups were assigned different days for program attendance so they wouldn't have the opportunity to exchange information while waiting for medication.

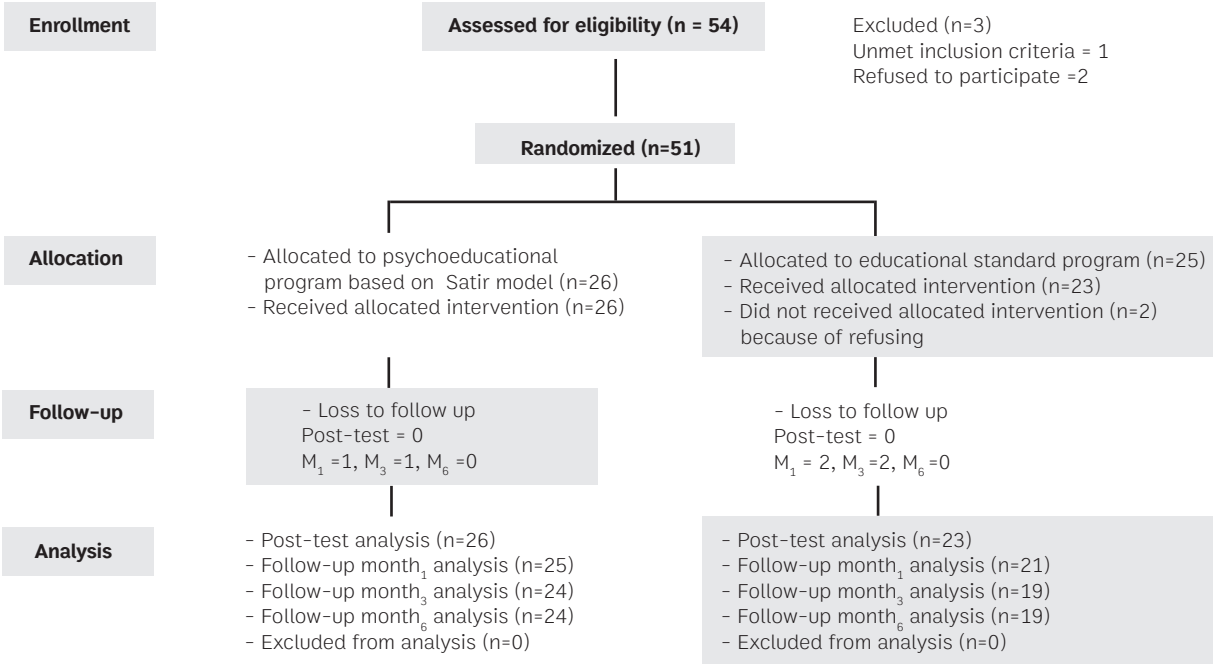

Figure 1: The Consolidated Standards of Reporting Trials (CONSORT)

Data Analysis

The personal information of all the sample groups was analyzed using descriptive statistics, t-test, Chi-square test and Sommer test. The level of clinical symptoms of children with autism in the experimental group and the control group were compared at week0 and $week_{28}$. The clinical symptoms of children with autism ASD, life congruence score and the stress index between parents in the experimental group and control group at $week_0$, $week_4$, $week_8$, $week_{16}$, and $week_{28}$ were compared by using Analysis of Covariance (ANCOVA) (one-tailed test). Analysis was done using the Generalized Estimating Equation (GEE), the influence of the category of children was adjusted so that the results of the analysis would not be erroneous.

Results

It was found that out of 49 people in the sample groups, most were female (38-persons), and the average age was 39 years old. There were 39 graduates from high school or who had a bachelor's degree. The majority of their children were boys (n = 38), and the average age of their children was 6 years old. The number of first visits and revisits were similar (n = 23 and 26, respectively). The sample groups were divided into an experimental group (26 persons) and a control group (23 persons). The experimental and control groups were not different in the areas of the parents' gender, occupation, level of education, relationship with the child, marital status, income, period of caring for the child, number of children under care, gender of the child under care, number of times that the child came for services, school attendance and types of medication, as shown in Table 1 which reveals equality in personal factors before the experiment.

Table 1: Socio-demographic between groups of parents who attended the PPSM and those who attended the SEP

Socio-demographic	n = 49	Number (percentage)		Difference between/ among groups Confident level at 95% (2-sided)
		Exp. Group (n=26)	Cont. Group (n=23)	
Parents' gender				χ^2 = 2.203, p = 0.138[b]
male	11 (22.4%)	8 (72.7%)	3 (27.3%)	
female	38 (77.6%)	18 (47.4%)	20 (52.6%)	
Parents' age				t = 1.519, p = 0.136[a]
Mean of age	Mean = 39.18 SD = 10.05	Mean = 41.19 SD= 10.53	Mean = 36.91 SD = 9.19	
Education				χ^2 = 4.031, P = 0.545[b]
Primary school	10 (20.5%)	3 (30.0%)	7 (70.0%)	
High school	21 (42.8%)	12 (57.1%)	9 (42.9%)	
Bachelor degree or higher	18 (36.7%)	11 (61.1%)	7 (38.9%)	
Child gender				χ^2 = 0.013, p = 0.911[b]
male	38 (77.6%)	20 (52.6%)	18 (47.4%)	
female	11 (22.4%)	6 (54.5%)	5 (45.5%)	
Age of child		6.4 (SD = 2.5)	6.0 (SD = 2.0)	t = 0.584, p = 0.562[a]

Receiving services				χ^2 = 0.208, p = 0.648[b]
First	23 (46.9%)	13 (56.5%)	10 (43.5%)	
Second or more	26 (53.1%)	13 (50.0%)	13 (50.0%)	
Medication				χ^2= 1.394, p = 0.498[b]
Antipsychotic drug	31 (63.3%)	15 (48.4%)	16 (51.6%)	
Anticonvulsant drug	10 (20.4%)	6 (60.0%)	4 (40.0%)	
Antipsycho+Anticonv	8 (16.3%)	5 (62.5%)	3 (37.5%)	

a = Independent t-test
b = Chi-Square test
PPSM = psychoeducational program based on the Satir model, SEP = standard educational program

List of abbreviations

PPSM	= psychoeducational program based on the Satir model
SEP	= standard educational program
ASD	= autism spectrum disorder
PSI-4-SF	= parenting stress index- 4th edition short form
S-CVI	= content validity index of total content
I-CVI	= content validity index of each item
SDQ	= strengths and difficulties questionnaire
GEE	= generalized estimating equation

Table 2: Comparison of clinical symptoms of children with ASD between experimental and control groups.

Time	Vineland score		Mean difference	95%CI of Mean difference		p-value
	Treatment (n=26)	Control (n=23)				
Baseline (week$_0$)	63.31 (24.20)	56.83 (19.13)	6.48	-6.17	19.13	0.154
Follow up at week$_{28}$	70.81 (22.32)	57.35 (22.64)	13.46	0.52	26.40	0.021**
Follow up at week$_{28}$ adjusted to baseline (week$_0$)			8.03	0.45	15.60	0.019**
p-value*	0.011*	0.404*				

* paired t-test
** P < 0.05

Table 3: Comparison of Life Congruence score at week$_0$, week$_4$, week$_8$, week$_{16}$, week$_{28}$ between experimental group and control group

Time	Experimental group	Control group	Mean difference	95% CI of Mean difference		p-value
Week$_0$	97.19	95.52	1.67	-7.95	11.29	>0.999
Week$_4$	111.31	105.17	6.13	-3.48	15.75	0.502
Week$_8$	118.76	107.22	11.54	1.59	21.49	0.014*
Week$_{16}$	114.72	108.91	5.81	-4.23	15.85	0.681
Week$_{28}$	94.20	94.57	-0.37	-10.41	9.68	>0.999

*p<0.05

Table 4: Comparison of clinical symptoms of children with ASD between experimental and control groups.

Time	PSI scores	Mean difference	95% CI of mean difference		p-value
Experimental group					
$Week_0$	100.12	0			
$Week_4$	95.46	-4.65	-11.00	1.69	0.360
$Week_8$	94.98	-5.14	-11.89	1.61	0.299
$Week_{16}$	92.82	-7.30	-14.16	-0.44	0.029*
$Week_{28}$	90.77	-9.35	-16.21	-2.49	0.002**
Control group					
$Week_0$	98.39	0			
$Week_4$	96.00	-2.39	-9.14	4.36	>0.999
$Week_8$	91.57	-6.83	-13.58	-0.08	0.045*
$Week_{16}$	93.09	-5.30	-12.05	1.45	0.253
$Week_{28}$	93.30	-5.09	-11.84	1.66	0.315

*p<0.05
**p<0.01

Clinical symptoms of children with autism: It was found that the Vineland Adaptive Behaviour Scale score between $week_0$ and $week_{28}$, in children with ASD whose parents took the PPSM, was significantly higher than children with autism whose parents attended the standard educational program (p=0.019), which reveals that the clinical symptoms of children with ASD whose parents attended the psycho educational program based on the Satir model (PPSM), were improved at $week_{28}$ follow up.

Cooperation in taking medication: It was found that there were no changes in cooperation of taking medication in children with ASD at $week_4$, $week_8$, $week_{16}$, and $week_{28}$. However, in the control group, there were changes in the percentage of cooperation in taking medication at each point of follow up (see figure 2). Analysis results using GEE found that the PPSM is significantly related to the varied percentage of cooperation in taking medication ($p < 0.001$). (table not shown).

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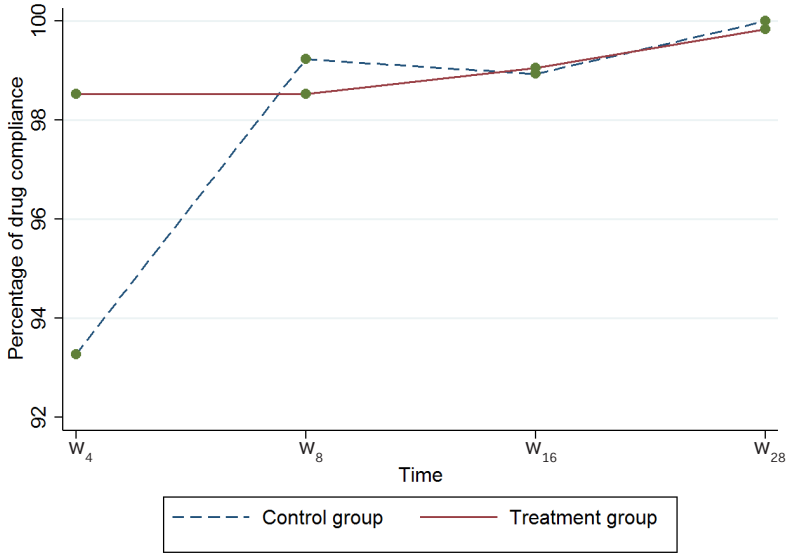

Figure 2: Percent of medical compliance of children with ASD at post-test (week4), and at week$_8$, week$_{16}$, week$_{28}$ follow-up between experimental and control groups.

The percentage comparison of ASD children's cooperation in taking medication, between the experimental group and the control group using GEE statistics, showed that the PPSM was related to the percentage of cooperation in taking medication. The percentage of cooperation in taking medication between the experimental and the control group was different at week$_4$. At each point of follow up, there were no changes in the percentage of medical compliance, but it has shown in the control group.

The parents' life congruence: It was found that the life congruence of parents of children with ASD in the experimental group was better before joining the program at week$_4$, week$_8$, and week$_{16}$. Life congruence continuously increased much from week$_0$ to week$_8$ but decreased at week$_{28}$. GEE analysis results found that there is no correlation between participation in the psycho educational program and the change in score of the parents' life congruence (p = 0.467) (table not attached).

The stress of parents. The average of parenting stress index scores of the experimental group, measured 4 times after taking the Satir Model -based psychoeducational program, was normal. However, at week$_4$, week$_8$, week$_{16}$ and week$_{28}$ it decreased to a lower level than before joining the program, while GEE analysis results revealed that the psychoeducation program based on the Satir Model did not relate to the variable of the scores of PSI (p = 0.244) (table not included).

Discussion

Clinical symptoms of ASD children from the experimental and control groups were different at week$_{28}$. This shows that the PPSM for parents was beneficial and helped improve the clinical symptoms of ASD children over short and intermediate terms, which was similar to past studies (Burrell & Borrego, 2012). This demonstrated that the ASD children in the experimental group had better clinical symptoms than those in the control group, which is according to the research hypothesis. This research result was different from the study done by Gordon et al. (2015). This reveals that the type of psychoeducational program for parents that affects changes in the clinical symptoms of ASD children, must involve

the emotions and feelings of the parents to provide mental support for them, so they can be stable. This is to reduce negative emotions when caring for ASD children or to lessen negative reactions to the symptoms or behaviors of ASD children, which will have a positive effect and create good relationships between the children and their parents.

The results of comparison of the percentage in cooperation in taking medication in ASD children, found that the PPSM was related to medication compliance percentage score with statistical significance (EEG test, $p < 0.001$, table not shown), and medication compliance between the experimental group and the control group was only different at $week_4$. There were no changes in medication compliance percentage score at $week_8$, $week_{16}$, and $week_{28}$ in the experimental group. It can be explained by the medication compliance percentage in the experimental group being at a high level since $week_4$ and rather constant at $week_8$, $week_{16}$ and $week_{28}$. Therefore, the Satir Model-based psychoeducational program affected the knowledge and understanding of parents who saw their children take their medication every day during the first 5 educational sessions of attending the program, and also realized the importance of ASD children taking medication at school. However, there was an increase in the medication compliance percentage in the control group at each period of follow up, which may be a result of the 5 training sessions on how to take the medication in the standard education group, showing that the program was beneficial for the parents. This suggests that psychoeducation as a therapy method, along with medication for the treatment of ASD children, increases the knowledge and understanding of parents regarding their children's social behavior, helps parents take better care of their children, increases understanding of ASD treatment, and results in a positive attitude towards medication compliance, which correlate with past studies (Burrell & Borrego, 2012; Gordon et al., 2015; Srikosai, Thapinta, Kittirattanapaiboon, & Piyavhatkul, 2014; Lukens & McFarlane, 2004; Novicka, & Novick, 2013).

The average life congruent score of parents in the experimental group was better than before they attended the program, with the life congruence level continuously increasing from quite a lot to very much at $week_0$. This was according to the research hypothesis which shows the efficiency of the Satir Model-based psychoeducational program, similar to a past study (Burrell & Borrego, 2012). This means that when parents are connected to life energy, or when their internal resources are able to use positive life energy to deal with factors affecting the mind (session 3 of the program), it will enable the parents to connect with their inner positive energy, including communicating with their inner self e.g. "Having an ASD child has changed your family and your life in many ways. I want you to find things about your child that can make you feel happy." "Are you proud of yourself for being able to raise him?" "Whenever you feel frustrated, bored or want to give up, can you return to this point which you are proud of?" Also, parents were encouraged and praised when they expressed their thoughts positively, had a positive outlook, or tended to use their potential helpfully. There was homework for parents emphasizing how to deal with their emotions and feelings using internal positive energy as a tool, as well as writing down positive points about themselves and their children, and rereading to check their state of mind. The basic belief of the Satir Model is that everyone has internal resources to help them be successful in self-adjustment, and to grow and develop (Satir et al., 1991). When an individual connects with their inner resource of self, it creates positive energy to better deal with what impacts the mind.

There was a significant difference in the life congruence of parents, between the experimental group and the control group at $week_8$ follow up. This means that the PPSM effect in the short term increases life congruence. However, it was found that the average score of life congruence in the group that attended the Satir Model-based

psychoeducational program was higher than the group that attended the standard educational program at each point of follow-up. This shows the efficacy of the Satir Model-based psychoeducational program in helping the parents to connect with their spiritual inner self in the 2nd and 3rd sessions, how to interact with others (intrapsychic-interpersonal) in the 2nd, 3rd, 4th, and 5th sessions, internal resources within the self (internal resources) in the 2nd through to 6th sessions, experiences with others and having positive interpersonal communication in the 4th and 5th sessions. All experiences are part of increasing life congruence (Satir et al., 1991).

The average score from the stress index scale of parents, after attending all of the Satir Model-based psychoeducation program, was normal after being measured 4 times , however, it was less than normal before attending the program. This was according to the research hypothesis which showed that the Satir Model -based psychoeducational program decreased stress, both in the short term and intermediate term. It can be concluded that the Satir Model -based psychoeducational program directly results in decreasing stress in parents. The program's function can be explained as: surveying the form of relationships of parents with others when having problematic or conflicting situations, effects caused by using familiar ways to react to problematic situations, reviewing forms of communication leading to misunderstanding, and being clear, direct, polite and respectful of self and others (in the 4th and 5th sessions). Reviewing and instilling mental development in parents, through exchanging experiences in the areas of stress and treatment of children, as well as helping parents to be aware of self-care (6th session), would encourage the parents to make choices which make their lives more balanced. The last activity of the program was reviewing and being aware of self-care in all areas covering all life components which would help to connect with self on an ongoing basis and help parents to see the importance of self-care. This inner change in the parents would affect their role with their ASD children in a positive manner. It can be seen that the symptoms of the children improve and the medicine compliance percentage is increased. This study supports the 3 areas of psychoeducation according to the concept of Colom, Vieta, & Scott (2006) to (1) raise awareness of health disorder and be aware of warning signs and medication compliance (2) improve living standards, and (3) improve quality of life.

Conclusion

The Satir Model-based psychoeducational program helped the parents of ASD children to have more life congruence and less stress, and helped the children by improving their clinical symptoms and their cooperation in taking their medication. Therefore, this program should be used in the department's child and adolescent psychiatric departments.

Limitation

This study did not separate cases with severe symptoms, which may affect the conclusion of the efficacy of PPSM.

Declaration of interest: The authors have no conflict of interest to report.

Ethics approval and consent to participate: This research has been ethically approved by the Ethics Research Committee of Rajanagarindra Institute of Child Development according to document number 4/2559 and approved by the Ethics Research Committee of Faculty of Nursing, Chiang Mai University according to document number 036/2559

Consent for publication: Not Applicable

Availability of data and material: Not Applicable

Competing interests: Not Applicable

Funding: Financial support provided by the Department of Mental Health, Thailand.

Acknowledgement

We would like to thank Professor Dr. Suwanna Arunpongpaisarn for assistance in data analysis.

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