

# Effects of a Body Safety Training Program on Self-Prevention Skills against Sexual Abuse among Preschool-Aged Children: A Quasi-Experimental Study

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**Abstract:** Child sexual abuse is an important and serious issue that affects children both physically and mentally. Preschool-aged children lack the skills to protect themselves, making them at risk of being sexually abused. This quasi-experimental research aimed to investigate the effects of a Body Safety Training Program on self-prevention skills against sexual abuse among preschool-aged children. Participants were 58 preschoolers aged 5-6 years old studying in kindergarten level 3 of a kindergarten school in Bangkok, Thailand. The children were divided into two groups: an experimental group ( $n = 29$ ) and a control group ( $n = 29$ ). The control group received the regular school learning program. In contrast, the Body Safety Training Program was implemented in the experimental group for five days, 20-30 minutes per day, in addition to the regular school learning program. Data were collected using the Demographic Data Form and the What If Situation Test (WIST-III-R). Data analysis employed frequency, percentage, mean, standard deviation, the Mann-Whitney U Test, and the Wilcoxon signed-ranks test.

The findings revealed that after participating in the program, the mean rank of total skills and subscales of appropriate recognition, inappropriate recognition, say skill, do skill, tell skill, and reporting skill of the children in the experimental group were significantly higher than before receiving the program and significantly higher than that of the control group. The Body Safety Training Program effectively increases self-prevention skills in preschool-aged children. Nurses should provide advice, knowledge, and training about the sexual abuse prevention programs organized for teachers and parents. However, testing the program in multiple settings is needed before it can be widely used.

**Keywords:** Body safety, Child sexual abuse, Preschool-aged children, Self-prevention skills, Training program

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## **Introduction**

Child sexual abuse is a serious issue that has persisted throughout history. Although many sectors have issued measures to prevent and solve this problem, child sexual abuse still occurs worldwide, including in Thailand. The estimated prevalence of this problem worldwide is 127 cases per 1,000 people,<sup>1</sup> and more cases occur among girls (18%) than boys (7.6%).<sup>1</sup> In foreign countries, 5.98% of children under 7 years are victims of sexual abuse.<sup>2</sup> In Thailand, approximately 500 children under 10 years, both boys and girls, suffer from sexual abuse per year.<sup>3</sup> From 2022–2024, 2,070 children received help due to sexual abuse.<sup>4</sup> Although late school-aged children and teenagers are the age groups that experience sexual abuse the most, the youngest victim was a 3-year-old child,<sup>5–6</sup> and is likely to occur even when children are of preschool age.<sup>2,5–8</sup> The statistics of the One Stop Crisis Center, Nakornping Hospital, Chiang Mai Province, in the North of Thailand, showed that 11.2% of children and adolescents who were victims of sexual abuse were preschoolers aged 3–6 years.<sup>7</sup> With the limitation of studies in Thailand, the reports are likely much lower than the reality due to traditions and cultures, since some sexually abused children do not dare come forward and reveal the truth,<sup>7</sup> as well as the limitations in the current sexual abuse reporting system.<sup>4</sup> Moreover, Thailand appears to be facing challenges in terms of collaboration regarding research, policy, and also the legalization of sexual abuse.<sup>9</sup>

Sexually abused children are both physically and mentally affected, and this can occur over the short and long term. In terms of physical effects, it was found that 12.2% of children had wounds on their genitals and anus.<sup>7</sup> Psychological and emotional effects include difficulty sleeping, often daydreaming,<sup>10</sup> having nightmares and waking up in the middle of the night,<sup>11</sup> memory loss, not remembering or denying the traumatic event, changing personality quickly, deteriorating in behavior or academic abilities, showing inappropriate sexual behavior, having difficulty controlling emotions, having

a low level of emotional connection, feeling insecure, and having behavioral problems.<sup>10</sup> All of these will affect the children's development.<sup>10</sup> In addition to the physical, psychological, and emotional effects, the total financial cost over a person's lifetime due to child sexual abuse is estimated to be around \$9.3 billion.<sup>12</sup>

Previous studies found that only 16% of children knew they should report secret touching, and less than 30% were aware of using verbal responses to refuse inappropriate touching.<sup>13</sup> Even fewer children (less than 20%) realized they needed to remove themselves from abusive situations.<sup>9</sup> Moreover, it was found that children who experience sexual abuse often fail to report it due to language barriers and difficulty in naming their genitals correctly.<sup>14</sup>

Thus, children should be taught to protect themselves as quickly as possible. The more children are familiar with self-prevention skills against sexual abuse, the more they will be armed with the ability to protect themselves from sexual abuse.<sup>15</sup> However, in Thailand, there are studies on sexual abuse prevention programs among children, but most of them have been conducted among school-aged children and teenagers. Only one report study was conducted among preschool children, with an emphasis on teaching the right touch and personal safety skills against sexual abuse to preschool children; unfortunately, this study did not focus on testing the result of the program on crucial skills, which are say, do, tell, and report skills.<sup>16</sup> Thus, more studies are needed to evaluate the effects of the program on promoting self-prevention skills among preschool-aged children.

## **Literature Review and Conceptual Framework**

Child sexual abuse (CSA) involves many behaviors and actions that adults or those with more power act toward children, whether touching the genitals, having sexual activity, allowing children to watch pornography

or using children as models to take obscene photos, using words and eyes that indicate the intent to sexually abuse or child prostitution.<sup>17</sup>

Although preschool children can communicate in more complex language and sentences that adults can understand and learn many things, they still have limited rational thinking.<sup>18-19</sup> When being exposed to situations where they are at risk of being sexually abused or have been sexually abused, children usually do not fully understand what is happening to them and do not know what to do with these situations. They are also unable to tell adults because they do not understand and are confused about whether the person familiar with them committed sexual abuse. Children do not know the action is wrong, so they cannot refuse or escape from that situation.<sup>20</sup>

Most people believe that those who are familiar with children cannot sexually abuse children. Parents, therefore, often warn children to be aware of strangers. However, in reality, people with the highest statistics of child sexual abuse are those whom the children know,<sup>5</sup> 6% from strangers<sup>21</sup> especially the men the children know and are familiar with, such as father, stepfather, or relative. Children are easily deceived, especially by those they feel comfortable with, like a friend, or when protected.<sup>2,5</sup> The common places where children are sexually abused are their own homes.<sup>2,5,7</sup> The mentioned statistic indicates that 10% of children have experienced sexual abuse in the educational system. A kindergarten teacher's personal experiences also suggest that CSA occurs among preschoolers in kindergarten.<sup>21</sup> Moreover, it was found that preschool children experience a variety of CSA facilitated by adults including abuse within the family, such as those committed by siblings, parents, or uncles, as well as incidents occurring outside the family involving older kids or strangers from the community.<sup>22</sup> CSA can be prevented by promoting children's self-prevention skills against sexual abuse. This can be done by relevant persons from a young age through observational learning or modeling from teachers and characters in example situations.

This intervention study was based on Bandura's<sup>23</sup> social learning theory and literature review. In this theory, observational learning and modeling are the main concepts by which people learn through observing and imitating others' behavior.<sup>23</sup> The model of learning through observation can be a live model, which is a real person, such as a family member, friend, or a member of the general public, or a symbolic model, which is the real or fictitious nature depicted in books, television programs, movies, or online media.

Programs have been developed to prevent sexual abuse both abroad and in Thailand, such as Who Do You Tell?,<sup>24</sup> Safe Touches,<sup>25</sup> Safer, smarter kids,<sup>26</sup> Talking about Touching: a Personal Safety Curriculum,<sup>27</sup> My Body Is Mine,<sup>28</sup> and a Body Safety Training Program.<sup>29</sup> In a Body Safety Training Program (BSTP),<sup>30</sup> children are taught to take ownership of their bodies, safety aspects that must be followed to keep their body safe, and vocabulary to name private organs correctly. Examples of situations that are appropriate and inappropriate for someone to touch or ask to see private parts are given. There is the practice of denial, which involves escaping from a risky situation and failing to report incidents that have happened to others. Additionally, knowledge and practices should be regularly reviewed. Preschool children will learn through role models, which are cartoon characters that are similar in age to them, examples of various situations, and examples of multiple skills used to prevent themselves from sexual abuse when encountering a risky situation.

The main goal of all sexual abuse prevention programs is to teach children to equip themselves with self-prevention skills against sexual abuse. The program may vary in details or methods used in teaching. Some are short-duration programs with 1–2 sessions, but activities that last 45–60 minutes are considered too long for preschool children's attention spans. Some programs incorporate a range of learning methods, including books, songs, posters, and videos. Some teaching media, such as videos, may be challenging to apply to the culture and context of preschool children in Thailand. Moreover,

some programs are more suitable for elementary school children than preschool children. Some programs do not cover the necessary skills for sexual abuse prevention. Therefore, based on a review of all programs, the BSTP developed by Dr. Sandy K. Wurtele<sup>29</sup> was selected for application to preschool children in Thailand because it is specifically designed for this age group. The primary concept of teaching encompasses all skills necessary for self-protection. Children are given practice and review of skills to ensure their sustainability in learning. Additionally, teaching media that are easy to manage are used, making them accessible to preschool children across various contexts.

The Early Childhood Curriculum B.E. 2560<sup>31</sup> used in Thailand suggests that children aged 3–6 years should learn a broad story about themselves, including their first name, surname, appearance, various organs, keeping their body clean and in good health, eating healthy foods, being careful of their safety from others and nearby dangers and treating others safely. However, there has not yet been a clear or specific mention of learning about sexual abuse prevention in the curriculum, which is used as the main guideline for teaching and learning management for children aged 3–6 years at the kindergarten level in Thailand.

The BSTP is a training program aimed at teaching safety skills and self-protection skills against sexual abuse to children aged 3–7 years old. This program is widely used in many Western countries and some Eastern countries. For example, a study of the BSTP in the People's Republic of China<sup>32</sup> among 150 children aged 3–5 years and in the Republic of Türkiye<sup>33</sup> among 83 children aged 3–6 years revealed an increasing sexual abuse prevention knowledge and skills. The program is effective in gaining appropriate recognition, inappropriate recognition, say, do, tell, and report skills. However, study in Thailand is limited. Thus, this study aimed to test the effectiveness of BSTP on self-prevention skills, which will prevent them from sexual abuse when in risky situations.

## **Hypothesis**

After completing the BSTP, the mean rank score of self-prevention skills against sexual abuse of children in the experimental group would be significantly higher than before receiving the program and significantly higher than that of the control group.

## **Methods**

**Design:** This study employed a quasi-experimental design with a two-group, pretest–posttest approach. The report followed the Transparent Reporting of Evaluation with Non-randomized Designs (TREND) checklist as a guideline.

**Sample and Setting:** The participants in this study were preschool-aged children studying in a purposively selected kindergarten school in the Bangkok Metropolitan Region. The criteria for school selection were: 1) a co-educational school, where male and female students are taught together; 2) not teaching or organizing activities about sexual abuse prevention; and 3) the school director was willing to participate in the program. Simple random sampling was used to select four classrooms from kindergarten level 3, and then two classrooms were randomly assigned to the experimental group and two to the control group. The inclusion criteria of the children were being able to communicate and understand Thai, and their parents giving consent for the children to participate in the study. The exclusion criteria of the children were: 1) unable to participate in the activities five times, 2) having health problems such as serious illnesses and being hospitalized and unable to participate in the program, and 3) having developmental problems, such as attention deficit hyperactivity disorder (ADHD) or a learning disorder (LD).

The sample size was calculated based on similar research.<sup>16</sup> The parameters for t-test statistical analysis were determined to test the means of an independent

t-test (one-tailed). The power of the test (1 - b) was set from the accepted standard value at 0.90, and the level of significance (a) was set at 0.05. Based on similar research on self-prevention skills against sexual abuse among preschool-aged children,<sup>16</sup> the obtained effect size was used to calculate the sample size using G\*power Version 3.1.9.7.<sup>34</sup> The cohort size was 26 participants per group. Additionally, the cohort size was increased by 15%<sup>35</sup> to maintain sufficient statistical power in case of participant drop-out. Then, the cohort size for both the intervention and control groups was 29 children per group, totaling 58 participants.

Students from four classrooms were purposively selected based on the inclusion criteria. The primary investigator (PI) gave information about this study and asked for permission from their parents. Then, 14–15 students per classroom were volunteered by their parents, giving consent to participate in this study. There were 29 students in the control group and 29 students in the experimental group. To prevent the intervention program from being contaminated, the study began in the control group first, and after completion in the control group, the experimental group began.

**Ethical Considerations:** This research was approved by the Ethical Review Committee for Human Research, Faculty of Medicine Ramathibodi Hospital, Mahidol University (COA. MURA2023/361). Subsequently, a letter was sent to the school director requesting permission. After obtaining permission, the letter was then sent to the parents of preschool-aged children. Once the parents agreed to join the program, they were asked to sign the informed consent form. Regarding the children's participation in the program activities, the PI asked for their verbal consent and readiness. Additionally, the PI observed the children's reactions for signs of discomfort or reluctance to participate in the research, such as unhappy expressions, turning away, attempting to leave the room, or crying.

Children could leave the research activities at any time. The data obtained from this research were kept confidential. The research results are being published in their entirety for academic purposes only.

**Research Instruments:** These consisted of two instruments for data collection and the intervention program instruments.

*The General Information Questionnaire* was used to collect information on the children's gender and age, their relationship with caregivers, caregivers' age, caregivers' educational level, family income, and the teaching of sexual abuse prevention to children.

*The What If Situation Test (WIST-III-R)*, developed by Wurtele et al.,<sup>36</sup> was utilized to evaluate the self-protection abilities of children and to measure self-prevention skills against sexual abuse for children three years and older. It was later updated to the WIST-III-R in 2009. The WIST-III-R<sup>36</sup> was utilized to evaluate the self-protection abilities of children and sexual abuse prevention knowledge. Participants were asked to answer how they respond to the six situations describing appropriate and inappropriate requests to look at or touch children's genitals and assess children's ability to recognize inappropriate requests. The first section comprises six vignettes, each with scores for recognition and follow-up questions for four skills (say, do, tell, report). The total score ranges from 0 to 30. The second section assesses attitudes toward sexual abuse with a personal safety questionnaire; the total score ranges from 0 to 4. The high score indicates high self-prevention skills against sexual abuse.

The WIST-III-R<sup>36</sup> was downloaded from the website [www.sandywurtele.com](http://www.sandywurtele.com). The PI requested permission from Dr. Sandy Wurtele to use the WIST-III-R via electronic mail, following the instructions specified on the website. After the permission was granted, the WIST-III-R was translated into the Thai language through a rigorous translation process<sup>37</sup> consisted of 1) a forward translation step by a language expert with good knowledge and understanding of English and

Thai, 2) a review of the translated version by the research team, 3) backward translation by the bilingual person who could use both languages well and was not the same person as the first translator in the first step and had never seen the original version of the research tool before to reduce bias in back translation, 4) comparison of the original version and the back-translated version by another bilingual expert, and 5) pretest-procedures. The WIST-III-R was verified for content accuracy, appropriateness of language use, format, and suitability of activities and sequence of content by three experts, consisting of a nurse lecturer specializing in child health promotion, a nurse lecturer specializing in developmental psychology, and a kindergarten teacher.

The content validity index (CVI) was investigated based on the experts' consistent opinions and acceptance. The CVI of the WIST-III-R was 0.99. After that, the WIST-III-R was administered to eight kindergarten-level 3 students, consisting of four males and four females, to assess whether the children could understand the example situations and questions. It was found that the children could understand the example situations and questions, so no additional amendments were made. The test-retest method was used to assess the stability of the instrument among 30 students in kindergarten level 3 over two weeks. The test-retest reliability coefficient was 0.76.

## **The Body Safety Training Program (BSTP)**

The BSTP<sup>29</sup> is a program for teaching self-prevention skills against sexual abuse to children aged 3–7 years. The content contains basic information about body and body safety, private parts, body safety rules, appropriate and inappropriate touching situations, and self-prevention skills against sexual abuse. Children will learn through illustrations based on the conditions, games, skill-training activities with exercises, and repeated review and reinforcement.

This Program consists of two versions: one for parents and one for teachers. For this study, the version for teachers was selected due to the focus on self-prevention skills against sexual abuse. The PI asked permission from the owner to use the program and translated it into the Thai language. The BSTP in the version for teachers starts with learning about the body, followed by self-prevention skills against sexual abuse. It consists of 20 sub-lessons, covering five days, with an approximate duration of 20–30 minutes per day. In the program, the preschool-aged children have learned about the following topics: basic information about the body and body safety, private parts of the body, body safety rules, appropriate and inappropriate touching situations, and self-prevention skills against sexual abuse through illustrations, example situations with illustrations, games, skills training activities, exercises and repeated review and reinforcement to enable children to protect themselves from sexual abuse when encountering risky or inappropriate situations.

The teaching media and materials consisted of 62 illustrations and drawings of example situations corresponding to the content in all 20 sub-lessons, measuring 40 centimeters in width and 60 centimeters in length, created by a person with the drawing ability using the Procreate program. The illustrations were based on the interpretation and details of the original BSTP illustrations and adapted to suit the Thai context and culture, as advised by Dr. Sandy Wurtele, the program owner. The game equipment, including OK/NOT OK answer cards and reward stickers, was also prepared.

The pilot study was conducted with eight kindergarten level 3 students (four males and four females)<sup>33</sup> to evaluate the effectiveness of the content, language, and examples in the example situations and questions, as well as the format and duration of the activities. The results indicated that the children had no difficulty understanding the material; therefore, no further changes were required.

**Data Collection:** This study was conducted following approval by the IRB committee from November 2023 to January 2024. The PI approached caregivers of the

children in the control group first to explain the objectives of the study, benefits and risks, and informed consent. After they signed the agreement form, they would be provided with the General Information Questionnaire to complete and return the following day. Then, the PI met with the participants and assessed their pre-test for self-prevention skills against sexual abuse using the WIST-III-R in a private room with which the children were familiar. Each interview took approximately 15 minutes. The control group then participated in their regular school class schedule for one week. In the following week, the PI reassessed the control group's post-test. After completing the study in the control group, the study in the experimental group began with the same procedures as those in the control group. The participants in the experiment group received the BSTP for five days, 20–30 minutes per day. The participants were divided into four small groups, each consisting of 7–8 children. The PI conducted the activities in groups, one at a time. The program started with recognizing the appropriateness of touch, how to refuse, resist, and report, and also taught about how child sexual abuse is never the child's fault in five days. Stickers were distributed to children who completed the activity daily as a reward and to increase their compliance with the next day's activity. Upon completion of the activities, the post-test was assessed by the PI immediately after program completion. Additionally, regarding children's benefits, after the research concluded, the PI conducted the activities of the BSTP for those in the control group.

**Data Analysis:** The data obtained from the WIST-III-R were checked for completeness. Then

they were analyzed using the SPSS version 29. Descriptive statistics analyzed the general information of the samples. Chi-square and Fisher's exact test were used to compare the general characteristics of the experimental and control groups. The assumption of the t-test was performed, and it showed that the data were not normally distributed according to the value of the Shapiro-Wilk test ( $p < 0.05$ ) together with the Box plot, Normal Q-Q plot, Detrended Normal Q-Q plot, and Histogram. For this reason, non-parametric statistics were employed. The differences in the mean rank of self-prevention skills against sexual abuse within the control group and the experimental group before and after participating in the program were compared using the Wilcoxon signed-rank test, and the Mann-Whitney U test was used to compare between groups.

## Results

The participants in this study consisted of 58 children divided into two groups of 29 each. The average age of participants in both groups was approximately 5 years and 8 months. Most caregivers in both groups were mothers, mostly holding bachelor's degrees. Furthermore, their family income was typically at a satisfactory level. In the control group, there was a higher percentage of caregivers teaching about sexual abuse prevention than in the experimental group. The demographic characteristics of the two groups were not significantly different ( $p > 0.05$ ), as shown in **Table 1**.

**Table 1.** Demographic characteristics of participants

Demographic characteristics	Experimental group (n = 29)		Control group (n = 29)		Statistics value	p-value
	n	%	n	%		
Child's gender						
Male	16	(55.20)	11	(37.90)	1.732 <sup>a</sup>	0.292
Female	13	(44.80)	18	(62.10)		
Child's age (months)						
Mean (SD)	68.45	(3.88)	68.34	(3.49)	-0.219 <sup>b</sup>	0.827
Min-max		60–75		60–74		

**Table 1.** Demographic characteristics of participants (Cont.)

Demographic characteristics	Experimental group (n = 29)		Control group (n = 29)		Statistics value	p-value
	n	%	n	%		
Caregivers' age (years)						
Mean (SD)	37.55	(8.00)	37.76	(8.15)	-0.187 <sup>b</sup>	0.852
Min-max		23-68		28-65		
Caregivers' relationships with the child						
Father	4	13.80	4	13.80	0.355 <sup>c</sup>	0.838
Mother	24	82.80	23	79.30		
Relative	1	3.40	2	6.90		
Caregivers' education level						
Lower secondary education	-	-	1	3.40	2.095 <sup>c</sup>	0.553
Upper secondary education/Vocational	6	20.70	3	10.30		
Certificate/ High vocational certificate						
Bachelor's degree	20	69.00	22	75.90		
Higher than a bachelor's degree	3	10.30	3	10.30		
Family income						
Adequate	28	96.60	29	100	1.018 <sup>a</sup>	1.00
Inadequate and being in debt	1	3.40	-	-		
Caregivers' teaching about sexual abuse prevention to children						
Yes	15	51.7	24	82.80	6.34 <sup>a</sup>	0.024
No	14	48.3	5	17.20		

Note. <sup>a</sup>Fisher's exact test, <sup>b</sup>t-test, <sup>c</sup>Chi-square test

When comparing the mean rank of total self-prevention skills against sexual abuse and all sub-skills (appropriate recognition, inappropriate recognition, say skill, do skill, tell skill, and report

skill) between the experimental and the control group, the differences were not significantly different at baseline ( $p > 0.05$ ) (Table 2).

**Table 2.** Comparison of the mean rank of self-prevention skills against sexual abuse between the experimental and control groups before receiving the program using the Mann-Whitney U test (N = 58)

Self-prevention skills against sexual abuse	Experimental group (n = 29)		Control group (n = 29)		Z	p-value (one-tailed)*
	Mean rank	Sum of rank	Mean rank	Sum of rank		
Total scores of self-prevention skills against sexual abuse	28.02	812.50	30.98	898.50	-0.670	0.251
Appropriate recognition	30.84	894.50	28.16	816.50	-0.859	0.195
Inappropriate recognition	30.60	887.50	28.40	823.50	-0.757	0.225
Say skill	27.43	795.50	31.57	915.50	-1.009	0.157
Do skill	30.22	876.50	28.78	834.50	-0.340	0.367
Tell skill	27.29	791.50	31.71	919.50	-1.043	0.149
Report skill	26.95	781.50	32.05	929.50	-1.381	0.084
Attitudes towards sexual abuse and sexual attitudes	30.22	876.50	28.78	834.50	-0.341	0.367

Note. \*Based on Armitage's criterion that the p-value of a two-tailed test is double that of a test with one tail by Mantel<sup>39</sup>

After completing the BSTP, the mean rank of total self-prevention skills against sexual abuse and all sub-dimensions of the experimental group were significantly higher ( $Z = -4.683$ ,  $p < 0.001$ ) than before receiving the program (Hypothesis 1) (Table 3). BSTP

participants had a significantly higher mean rank of self-prevention skills against sexual abuse and all sub-skills than that of the control group after the program ( $Z = -6.022$ ,  $p < 0.001$ ) (Hypothesis 2) (Table 4).

**Table 3.** Comparison of the mean rank of self-prevention skills against sexual abuse of the experimental group before and after receiving the program using the Wilcoxon signed ranks test ( $n = 29$ )

Self-prevention skills against sexual abuse	Ranks	N	Mean rank	Sum of rank	Z*	p-value (one-tailed)
Total score of self-prevention skills against sexual abuse						
	Negative Ranks	1	1.00	1.00	-4.683	<0.001
	Positive Ranks	24	15.50	434.00		
	Ties	4				
Appropriate recognition						
	Negative Ranks	0	0.00	0.00	-2.236	0.013
	Positive Ranks	5	3.00	15.00		
	Ties	24				
Inappropriate recognition						
	Negative Ranks	0	0.00	0.00	-1.890	0.03
	Positive Ranks	4	2.50	10.00		
	Ties	25				
Say skill						
	Negative Ranks	1	1.50	1.50	-4.524	<0.001
	Positive Ranks	25	13.98			
	Ties	3				
Do skill						
	Negative Ranks	0	0.00	0.00	-4.577	<0.001
	Positive Ranks	27	14.00	378.00		
	Ties	2				
Tell skill						
	Negative Ranks	3	3.00	9.00	-3.942	<0.001
	Positive Ranks	20	13.35	267.00		
	Ties	6				
Report skill						
	Negative Ranks	1	6.50	6.50	-4.222	<0.001
	Positive Ranks	24	13.27	318.50		
	Ties	4				
Attitudes towards sexual abuse and sexual attitudes						
	Negative Ranks	1	5.50	5.50	-3.331	<0.001
	Positive Ranks	15	8.70	130.50		
	Ties	13				

Note. Negative ranks: score after receiving the program < before receiving the program

Positive ranks: score after receiving the program > before receiving the program

Ties: score after receiving the program = before receiving the program

\* Based on negative ranks

**Table 4.** Comparison of the mean rank of self-prevention skills against sexual abuse between the experimental and the control groups after receiving the program using the Mann-Whitney U test (N = 58)

Self-prevention skills against sexual abuse	Experimental group (n = 29)		Control group (n = 29)		Z	p-value (one-tailed)
	Mean rank	Sum of rank	Mean rank	Sum of rank		
Total scores of self-prevention skills against sexual abuse	42.83	1242.00	16.17	469.00	-6.022	< 0.001
Appropriate recognition	33.00	957.00	26.00	754.00	-2.791	0.003
Inappropriate recognition	30.50	884.50	28.50	826.50	-1.427	0.077
Say skill	41.62	1207.00	17.38	504.00	-5.966	< 0.001
Do skill	42.86	1243.00	16.14	468.00	-6.514	< 0.001
Tell skill	36.53	1059.50	22.47	651.50	-3.253	< 0.001
Report skill	37.62	1091.00	21.38	620.00	-3.750	< 0.001
Attitudes towards sexual abuse and sexual attitudes	31.97	927.00	27.03	784.00	-1.214	0.113

## Discussion

This study demonstrated the effectiveness of BSTP in increasing self-prevention skills against sexual abuse, including appropriate and inappropriate recognition, say skill, do skill, tell skill, and report skills. The preschool-aged children in the BSTP were taught about body ownership, safety, and rules. They learned proper terminology for private parts and were provided examples of appropriate and inappropriate situations for others to touch or view their private parts. The children also practiced refusing, escaping, and reporting risky situations, with opportunities for review and repetition to reinforce their learning.

Previous studies support our study in that teaching the right touch and personal safety skills against sexual abuse among kindergarten boys and girls improve self-prevention skills against sexual abuse.<sup>16</sup> Specifically, the studies by Citak Tunc et al.<sup>33</sup> and Zhang et al.<sup>32</sup> also found that the BSTP can improve self-prevention skills against sexual abuse in preschool-aged children.

BSTP also focused on teaching preschool-aged children ways to protect themselves from sexual abuse through observational learning with models.<sup>15</sup> The models, including the researcher and cartoon characters, demonstrated various skills and behaviors in different situations. The children in the experimental group

imitated the models to create new or reinforce existing protective behaviors. The results showed that the most significant models for preschool-aged children were their friends who participated in the program. Organizing activities in small groups facilitated close observation and imitation of the researcher and classmates, enabling children to learn and reinforce protective behaviors effectively.

The BSTP program focused on teaching preschool-aged children in the experimental group about self-prevention skills against sexual abuse using teaching media with models similar to their age. The children showed improved attention processes by paying attention to the models and recognizing their actions. They also demonstrated retention processes by remembering the information and structuring it for easy recall. The production processes were enhanced as the children gained the ability to perform self-prevention skills through training and guidance. The motivation processes were stimulated through positive reinforcement, such as praise and stickers, which encouraged the children to practice the skills in small groups and demonstrate them in lessons. Overall, the BSTP program was effective in teaching self-prevention skills against sexual abuse to preschool children in the experimental group. This finding aligns with the study by Biyikoglu Alkan et al.,<sup>38</sup> which demonstrates that personal

hygiene education, based on the social learning theory, can foster positive health behaviors in young children through observation, learning, and imitation. Our findings contributed to the affirmation that preschool-aged children are able to learn to protect themselves from sexual abuse through observational learning and modeling by observing and imitating others' behavior.<sup>15</sup> This also supports the validity of Bandura's social learning theory.<sup>23</sup>

## Limitations

The sample in this study consisted of kindergarten level 3 students, aged 5–6 years, from a single kindergarten school in Bangkok. Therefore, the study results are limited in their generalizability to all preschool children with diverse learning styles and residing in other domiciles in Thailand. Additionally, bias may be possible since the PI both provided the intervention and collected the data. Moreover, this study obtained the data immediately after the program was completed. Thus, the sustainability of the preventative skills from sexual abuse among this participant group is questionable. Future studies should be conducted in various settings that represent the region of the country, with long-term follow-up. A randomized controlled trial should be considered to ensure reliable research findings.

## Conclusions and Implications for Nursing Practice

The study demonstrated that the BSTP effectively increases self-prevention skills against sexual abuse in preschool-aged children. It is recommended that nurses working with educational institutions provide advice and guidelines for organizing the BSTP or teaching self-prevention skills against sexual abuse in kindergarten. Knowledge and training about sexual abuse prevention should be organized for teachers, parents, and relevant agencies. Classroom teachers should participate in instructing the BSTP and know

self-prevention skills against sexual abuse, as they can regularly review these skills in the classroom learning plan to ensure long-term success. It is recommended that follow-up assessments be regularly carried out during the post-intervention period to continuously evaluate the durability of self-prevention skills against sexual abuse among the preschoolers who underwent the experimental program.

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## ผลของโปรแกรมการฝึกทักษะด้านความปลอดภัยของร่างกายต่อทักษะการป้องกันตนเองจากการถูกล่วงละเมิดทางเพศในเด็กวัยก่อนเรียน : การศึกษาภึงทดลอง

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**บทคัดย่อ:** การล่วงละเมิดทางเพศเด็กเป็นประเด็นปัญหาที่สำคัญและรุนแรงซึ่งส่งผลกระทบต่อเด็กทั้งทางด้านร่างกายและจิตใจ เด็กวัยก่อนเรียนยังขาดทักษะในการป้องกันตนเองจึงทำให้เลี้ยงต่อการถูกล่วงละเมิดทางเพศได้ การศึกษาครั้งนี้เป็นการวิจัยภัณฑ์ทดลองเพื่อศึกษาผลของโปรแกรมการฝึกทักษะด้านความปลอดภัยของร่างกายต่อทักษะการป้องกันตนเองจากการถูกล่วงละเมิดทางเพศของเด็กวัยก่อนเรียน กลุ่มตัวอย่าง คือ เด็กวัยก่อนเรียนอายุ 5-6 ปี จำนวน 58 คน ที่กำลังศึกษาอยู่ในระดับชั้นอนุบาล 3 โรงเรียนอนุบาลแห่งหนึ่งในกรุงเทพมหานคร ประเทศไทย กลุ่มตัวอย่างถูกแบ่งเป็นกลุ่มทดลอง (จำนวน 29 คน) และกลุ่มควบคุม (จำนวน 29 คน) กลุ่มควบคุมได้รับการเรียนแบบปกติตามตารางสอนของโรงเรียน และกลุ่มทดลองได้รับโปรแกรมการฝึกทักษะด้านความปลอดภัยของร่างกาย เป็นเวลา 5 วัน วันละ 20-30 นาที เก็บข้อมูลโดยใช้แบบสอบถามข้อมูลทั่วไป และแบบทดสอบสถานการณ์สมมติ (What If Situation Test: WIST-III-R) วิเคราะห์ข้อมูลด้วยวิธีการแจกแจงความถี่ ค่าร้อยละ ค่าเฉลี่ย станนบีร์เบนมาตรฐาน Mann-Whitney U Test และ Wilcoxon Signed Ranks Test

ผลการศึกษาพบว่า หลังการเข้าร่วมโปรแกรม กลุ่มทดลองมีคะแนนรวมทุกทักษะ และคะแนนเฉลี่ยของทักษะย่อย (การตระหนักรู้สัมผัสที่เหมาะสม การตระหนักรู้สัมผัสที่ไม่เหมาะสม ทักษะการพูด ทักษะการลงมือทำ ทักษะการบอกรอ และทักษะการรายงาน) สูงกว่าก่อนเข้าร่วมโปรแกรมและสูงกว่า กลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติ โปรแกรมการฝึกทักษะด้านความปลอดภัยของร่างกายมีประสิทธิผลในการเพิ่มทักษะการป้องกันตนเองในเด็กวัยก่อนเรียน พยาบาลควรให้คำแนะนำและฝึกการใช้ โปรแกรมป้องกันการล่วงละเมิดทางเพศให้กับครูและผู้ปกครอง อย่างไร้ความต้องการ ทดสอบโปรแกรม ในบริบทที่หลากหลายยังเป็นสิ่งจำเป็นก่อนการนำไปใช้ในวงกว้าง

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