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Determining the Appropriateness of the “What If” Situations Test (WIST) with Turkish Pre-Schoolers

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ABSTRACT

Measurement instruments are needed to assess the child’s sexual abuse prevention program. The purpose of the study was to determine the reliability and validity of the WIST (What If Situations Test) for Turkish culture. Participants were children of the 3–6 age group attending pre-school education institutions and the sample size was identified by means of a power analysis. Seventy children were identified as the sample with 0.85 power and 0.05 type I error according to the power analysis. Language validity, content validity, internal validity coefficient (Cronbach alpha coefficient), and test–retest analyses were conducted in terms of validity and reliability in the scope of efforts for adaptation to Turkish culture. Firstly, Kendall W = 0.83 was the score for the expert opinions concerning the content validity of the language validity scale. It was found that the Cronbach alpha coefficients were between 0.68 and 0.90 for the scale sub-dimensions of appropriate and inappropriate recognition, saying, doing, telling, and reporting. The test–retest reliability of the scale was found to be $r = 0.89$ and the test–retest reliabilities for the sub-dimensions (appropriate recognition, inappropriate recognition, say skills, do skills, tell skills, and reporting skills) were between $r = 0.48$ and $r = 0.92$. The test–retest reliability for the Personal Safety Questionnaire (PSQ), as having complimentary items to the WIST, was found to be $r = 0.82$. The reliability and validity analysis of the ‘What If’ Situations Test (WIST), used to evaluate pre-schoolers’ skills regarding self-protection against sexual abuse, showed that the Test’s adaptation to Turkish culture was reliable and valid.

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Introduction

Child sexual abuse (CSA) is a prevalent and serious public health problem in both developed and developing countries, which affects girls and boys regardless of their socio-economic status, ethnic background, or geographical location (Martyniuk & Dworkin, 2011; Ogunfowokan & Fajemilehin, 2012; Pereda, Guilera, Forns, & Gómez-Benito, 2009). This problem is considered one of the most severe violations of human rights (Nurcombe., 2002).

Although child sexual abuse is prevalent, it is a situation that is kept hidden; only 15% of children report their experiences. It is stated that children who are victims of abuse do not report the situation because they want to avoid the trauma or they are ashamed (Wurtele, 2009). Not reporting sexual abuse and the difficulties in diagnosis only makes the problem more important. It is emphasized that the most effective means of preventing sexual abuse is primary protection which includes actions to prevent the child from being subject to sexual abuse (Harder, 2005).

Although the definitions of sexual abuse may differ in research studies (e.g., abuse through contact, non-contact abuse) and data can be collected in a variety of ways (e.g., interviews, questionnaires), child sexual abuse (CSA) affects girls and boys regardless of their socio-economic status, ethnic background, or geographical location (Wurtele & Miller-Perrin, 2017, p.177). As sexual abuse has a physical, psychological, and economic impact on society, all segments of society have a role and responsibility in the prevention of it. Thus, there is a need for training programs for professionals working with children and programs for parents (Kenny et al., 2008; Wurtele, 2009). Such programs are provided to children at an early age, especially in developed countries under different titles (*Body Safety Training, Who Do You Tell?, Talking About Touching, Feeling Yes, Feeling No*) (Martyniuk & Dworkin, 2011) but are not yet implemented in Turkey. There is a need for scientific instruments, appropriately developed to suit the developmental stages of children, to test the effectiveness of the programs (Wurtele, Hughes, & Owens, 1998).

There is a need for programs which allow preschoolers to acquire skills regarding body safety for protection against sexual such as recognition of their own bodily private parts and the differences between girls and boys (Kenny, 2009). Effectiveness of prevention programs for providing children with knowledge about sexual abuse and acquisition of knowledge and skills regarding self-protection are determined by measurement tools which are scientifically valid and reliable (Wurtele & Owens, 1997; Zhang et al., 2014, 2013). These tools must be used to determine the content of training programs and their measure of impact for prevention of sexual abuse in terms of scientific effectiveness. The 'What If Situations Test (WIST) developed by Wurtele et al. (1998) measures the knowledge of children about body

safety for prevention of sexual abuse, skills for self-protection and their attitudes toward sexuality (Wurtele et al., 1998). The WIST is administered as a testing tool for children showing normal development aged between 3–6 (Kenny, 2010; Kenny, Wurtele, & Alonso, 2012; Zhang et al., 2014, 2013) and for cases diagnosed with autism (Kenny, Bennet, Dougery, & Steele, 2013). In the study regarding the tool, the pre-test results for those in the training group were as follows: appropriate recognition, $2.47 \pm .91$; inappropriate recognition, 1.42 ± 1.34 ; say skill, 2.02 ± 2.38 ; do skill, 1.49 ± 2.18 ; tell skill, $.90 \pm 1.76$, report skill, $.47 \pm 1.25$ and total skill, 4.88 ± 6.23 (Wurtele et al., 1998). In an experimental research design study conducted in China with 150 preschool children, the WIST pre-test results of 78 children participating in the training group were: appropriate recognition, 2.73 ± 0.66 ; inappropriate recognition, 41 ± 0.99 ; say skill, 3.40 ± 2.38 ; do skill, 2.48 ± 2.41 ; tell skill, 1.78 ± 2.25 ; report skill, 1.12 ± 1.80 , total skill, 8.78 ± 6.94 and PSQ 2.04 ± 0.95 (Zhang et al., 2014).

Information about measurement tools regarding the testing of Turkish children's knowledge, skills and attitudes toward body safety could not be found in the literature. If the 'What If' Situations Test enters Turkish literature, not only will it be possible to evaluate the knowledge, skills and attitudes of children regarding body safety as an important means of preventing sexual abuse, it will also be used to evaluate the effectiveness of the training conducted in this field.

Aims and hypotheses of this study

The aim of this study is to adapt the 'What If' Situations Test for Turkish culture by conducting reliability and validity studies and ensure that it enters the literature.

Hypothesis 1: The 'What If' Situations Test used to assess the knowledge, skills and attitudes of children regarding body safety to prevent sexual abuse is a reliable measurement tool for persons of Turkish culture.

Hypothesis 2: The 'What If' Situations Test used to assess the knowledge, skills and attitudes of children regarding body safety to prevent sexual abuse is a valid measurement tool for persons of Turkish culture.

Method

The methodological method, aimed to ascertain the knowledge, skill and attitudes of children regarding body safety for prevention of sexual abuse, was used to determine the reliability and validity of the measurement tool

developed in the scope of adapting the WIST to Turkish. The research study was conducted in a metropolis in the western regions of Turkey.

The population of the study comprised of a total of 2,626 children of the 3–6 age group attending pre-schools and day care centers under the supervision of the Ministry of Family and Social Policies in the central district of the province where the study took place.

The sample of the study was children aged 3–6 years from five selected private pre-schools and day care centers using a simple random selection method. For the number of sample, the power analysis program was employed and the original scale study was taken as a reference (Wurtele et al., 1998). According to the power analysis, a sample size of 65 children was determined, with a power of 0.85 and 0.05 type I error and the study was completed with 70 children (Douglas & Bonett, 2002; Erdogan, Nahcivan, & Esin, 2014; p. 188).

Participants

Of all children included in the study, 47.1% were girls and 52.9% were boys. Their average age (in months) was 56.40 ± 9.33 (min.–max.: 37–71) and the percentage of firstborns were 72.9%. The review of attributes of the children's parents showed that 87.1% of parents as a source of information were mothers. The average age of the parents was 33.98 ± 5.21 (min.–max.: 24–58) and 81.4% had spent most of their lives in a metropolis and had only one child. Fifty-seven percent of mothers were university graduates and the income of 85.5% was equal to their expenses (Table 1).

Materials

A “Socio-Demographic Data Collection Form” and the “WIST” was used to collect data for the research. The identity data form comprises of questions about the sex, age, birthplace of the child and their parents' occupations, and education and income level.

The ‘What If Situations Test: The original ‘What If Situations Test (WIST) was developed by Wurtele (et al.) in 1998 to assess pre-schoolers' self-protection skills against sexual abuse (Wurtele et al., 1998). The test includes four “appropriate touching” vignettes, four “inappropriate touching” vignettes and two short stories regarding attitudes toward sexuality. The two vignettes about touching at the beginning are warm up stories and are not included in the scoring. It comprises of a total of seven sub-dimensions including two about recognition, four about skills and one about attitude. These sub-dimensions are evaluated in three separate sections.

The “appropriate recognition” and “inappropriate recognition” situations in the first section assess differentiation skills. Three of the six vignettes describe appropriate touching (Parent, Doctor, Nurse) and a score between

0–3 can be obtained. The other three vignettes describe inappropriate touching (entitled Neighbor, Baby-Sitter and Man in Park) and a score between 0–3 can be obtained. Each “inappropriate touching” vignette is followed by questions assessing four skills (Say, Do, Tell, and Report). Each skill is scored between 0–6, with total skill scores ranging from 0 to 24.

The third section assesses the child’s attitude toward sexual abuse and their own sexuality. Two additional short stories were added to the scale and included 4 items comprising the “Personal Safety Questionnaire (PSQ)” sub-dimension. A score of 0–4 is obtained for the Personal Safety Questionnaire (PSQ) in this scope (Wurtele et al., 1998).

Procedure

As a first step, permission was sought from the author who developed the scale. Next, necessary permissions were obtained from the institution and ethical board. In the third stage, information meetings were held with the management regarding the aims and stages of the research study and information meetings were also held with parents and their written consent was obtained. The verbal consent of the children was obtained before administering the WIST and modeling clay was given as a gift to the children at the end. Data were collected by the researcher by means of the face-to-face technique in an empty room without any stimuli. Each meeting lasted 10 minutes. The classroom teacher of the child was present in the meeting as an observer. The criteria for children to be aged between 36–72 months, to show normal development and to have been toilet trained, were met.

Data analysis

Data analysis was carried out with the statistics software, SPSS 22.0 for Windows. Arithmetic mean ($\bar{X} \pm SD$) and percentages were used in the analysis of the data. Kendall goodness of fit (Kendall W) and Cronbach Alpha coefficient were used in the reliability and validity analyses and the Spearman rho correlation coefficient was used to calculate the relationship between the test–retest test scores. The Shapiro Wilk Test was used to determine whether the data has a normal distribution. As the data did not show a normal distribution ($p < .05$), non-parametric tests were used in the analyses. The Mann Whitney U Test and Kruskal–Wallis Variance Analysis test were used to make comparisons between the groups. The significance level was taken as $p < .05$ (Erdogan et al., 2014).

Ethical aspect of the study

This research study was conducted in accordance with the principles of the Helsinki Declaration. Written permission for adapting the program to

Turkish context was obtained from the developer of the 'What if' Situations Test (S.K. Wurtele) measuring tool. Ethical permission was granted by the Uludag University Clinical Research Ethical Committee with Decision No. 2014-11/2 for the research study. A signed informed consent form was obtained from the volunteer parents of children and verbal consent was obtained from the children.

Results

The two psychometric properties of the studies that were the main focus of the assessment included reliability and validity. The results consist in two sections in the framework of the reliability and validity of the 'What If Situations Test. In the scope of the adaptation of the WIST to Turkish culture, language validity, content validity, internal consistency (Cronbach alpha coefficient) and test-retest reliability analyses were carried out for validity and reliability testing.

Validity analysis

Validity refers to whether a measure assesses the condition, event or phenomena that it was developed to assess (Streiner & Norman, 2008). There are several types of validity and little agreement on its definition. The instrument was assessed in regards to construct validity. In order to test this, a language equivalence and content validity analysis was conducted (Erdogan et al., 2014, p.226).

It is necessary to remove language barriers and cultural differences from the instrument (Aksayan, & Gözümlü, 2003). To begin with, the researcher translated the tool from English to Turkish. The English version of the WIST was translated to Turkish by three experts in the field who had good knowledge of Turkish and English. The individual translations were combined by two academics to develop the Turkish language version. A linguist who was familiar with the two cultures and who had not seen the original English language version translated the Turkish language version back into English. This translation into English was then compared to the original tool. Later on, the opinion of an expert academic in the field of Turkish language and literature was sought for linguistic appropriateness. The instrument was thus brought to its final version to ensure language validity.

The opinions of eight experts (psychiatric nursing, pediatric health and diseases nursing, child and adolescent psychiatrist, psychologist, psychological guidance and counseling, psychology and child development) were sought for the content validity of the Turkish WIST Form. The Content Validity Index (CVI) developed by Waltz and Bausell was used to evaluate the opinions of the experts. The Kendall Goodness of Fit Coefficient was used

to evaluate the compatibility of the scores of the experts. It was found that the opinions of experts were consistent and that there was a fit between opinions (Kendall $W = 0.83$). The scales of evaluation by the experts ranged from 1 to 4. The lowest average score for the items given by experts was 3.5 ± 0.75 and the highest average score was 4 ± 0.0 . Once the opinions of the experts were assessed and the necessary revisions were made, it was found that the score means did not fall below an average score of “3”. As this was the case, the items were not taken out as a result of the content validity.

After the tool was ensured for language and content validity, a pilot study was conducted with eight children. It was assessed whether the vignettes and questions were understood by the children. The necessary revisions were made to the parts of the tool that were not understood. The data from this pilot study were not included in the research study.

Reliability analysis

Reliability refers to consistency of the measure across time, rater, and occasion (Streiner & Norman, 2008 p.8). The internal consistency and test–retest reliability measure was analysed for the WIST in the scope of the reliability analysis. The Cronbach alpha coefficient calculation method was used in order to determine the internal consistency of the WIST. The internal consistency coefficient is an indicator of the internal consistency and homogeneity of the items of the tool. The higher the Cronbach alpha coefficient of the tool, the better the items of the tool are consistent with each other in measuring the same features. The internal consistency coefficient of the WIST was 0.82. The internal consistency coefficient of the appropriate recognition skill in the tool was found to be 0.69, and the internal consistency coefficient inappropriate recognition skill was 0.71. The internal consistency coefficient for the sub-dimension for assessing the say skill was found as 0.72 and the internal consistency for the other sub-dimensions were 0.68 for the do skill, 0.69 for the tell skill and 0.90 for the reporting skill. As the personal safety sub-dimension comprised of four items and a question for personal attitude, the internal consistency coefficient was not calculated (Table 2).

The test–retest reliability measure was assessed in the scope of the reliability study for the WIST. To test the test–retest reliability measure, a retest was administered to 30 of the total 70 children in the sample of the study. The relationship between the first test and second test was evaluated with the correlation coefficient. The test–retest results for the WIST and its sub-dimensions were found to be between 0.92 and 0.48. It was seen that the highest correlation coefficient was for the inappropriate recognition sub-dimension and the lowest correlation coefficient was for the reporting sub-dimension (Table 2).

Table 1. Demographic characteristics of the children and their parents ($N = 70$).

Characteristic	<i>N</i>	%
Sex		
Girl	33	47.1
Boy	37	52.9
Average age of child (in months) (Mean \pm SD)	56.40 \pm 9.33	
Birth order		
First	51	72.9
Second	16	22.9
Third and above	3	4.2
Source of data		
Mother	61	87.1
Father	9	12.9
Average age of parents (in years) (Mean \pm SD)	33.98 \pm 5.21	
Number of children		
One	38	54.3
Two	28	40.0
Three and above	4	5.7
Place of longest residence		
Village	1	1.4
District	2	2.9
Province	10	14.3
Metropolis	57	81.4
Education level of mother		
Primary school graduate	5	7.1
Middle school graduate	4	5.7
High school graduate	16	22.9
University graduate	40	57.1
Post-graduate education	5	7.1
Education level of father		
Primary school graduate	4	5.7
Middle school graduate	3	4.3
High school graduate	27	38.6
University graduate	33	47.1
Post-graduate education	3	4.3
Income level of family		
Income more than expenses	10	14.3
Income equal to expenses	60	85.7
TOTAL	70	100.00

Table 2. Internal consistency and test–retest reliability coefficients for the ‘what if’ situations test (wist) and sub-dimensions.

WIST and sub-dimensions	Cronbach alpha ($N = 70$)	r ($N = 30$)
Appropriate recognition	.69	.84 $p = .000$
Inappropriate recognition	.71	.92 $p = .000$
WIST total	.82	.89 $p = .000$
Say skill	.72	.88 $p = .000$
Do skill	.68	.82 $p = .000$
Tell skill	.69	.74 $p = .000$
Report skill	.90	.48 $p = .007$
PSQ	–	.82 $p = .000$

The test–retest result for the sub-dimension of the Personal Safety Questionnaire (PSQ) (which are considered as complimentary items of the

Table 3. Relationship between wist inappropriate recognition vignettes.

Inappropriate recognition vignettes	Vignette 4	Vignette 5
Vignette 3	$r = .512^{**}$ $p = .000$	$r = .267^*$ $p = .025$
Vignette 5	$r = .577^{**}$ $p = .000$	

Spearman's Correlation * $p < .05$ ** $P < .00$

WIST) was 0.82. Measurement instruments should provide time-dependent stable tools in test–retest reliability (Kılınç & Aral, 2016). Having received a high test–retest reliability ($r = 0.82$) shows that the complimentary item as the sub-dimension of PSQ is reliable (Table 2).

A significant and positive relationship was found among the scores of the three vignettes about inappropriate recognition. There was a significant and positive relationship between the children's WIST inappropriate recognition scores for vignette 3 (Neighbor) between vignette 4 (Baby-Sitter) ($r = 0.512$, $p < 0.001$) and also vignette 5 (Man in Park) ($r = 0.267$, $p < 0.05$). A significant positive relationship was also found for vignette 5 and vignette 4 ($r = 0.577$, $p < 0.001$) (Table 3).

The comparison method of known groups was used to test the construct validity of the instrument. In this context, the score means of the WIST and sub-dimensions were compared according to the sex variable using the known-groups comparison to test the construct validity. A statistically significant difference ($p > .05$) was not found between the scores for girls and boys in regards to the WIST and sub-dimension score averages according to sex (Table 4).

Discussion

It is not appropriate to use a tool which is not valid and reliable or which does not serve the purpose of its use. Although reliability of a tool is dependent upon its validity, a tool that is reliable but does not have validity does not have importance in practice.

Table 4. Comparison of wist sub-dimensions scores according to means of sex of children ($N = 70$).

SEX WIST	Girls ($N = 33$) $\bar{X} \pm SS$	Boys ($N = 37$) $\bar{X} \pm SS$	Z	p^*
Appropriate recognition	2.15 \pm 1.03	2.08 \pm 1.11	-0.152	$p = 0.879$
Inappropriate recognition	2.27 \pm 1.00	2.29 \pm 1.02	-0.227	$p = 0.820$
Say skill	2.81 \pm 2.36	2.18 \pm 2.17	-1.159	$p = 0.246$
Do skill	1.06 \pm 1.63	0.78 \pm 1.52	-0.915	$p = 0.360$
Tell skill	1.48 \pm 1.87	1.24 \pm 1.93	-0.648	$p = 0.517$
Report skill	0.75 \pm 1.52	0.40 \pm 1.44	-1.944	$p = 0.052$
WIST total skill	6.12 \pm 5.14	4.62 \pm 5.35	-1.567	$p = 0.117$
PSQ	2.30 \pm 1.01	1.97 \pm 1.14	-1.409	$p = 0.159$

*Mann Whitney U Test

This study tested the construct validity of the tool in question. For this, the language equivalence and content validity was evaluated. The Kendall W analysis was used to evaluate expert opinions and a consistency was found among the expert opinions. The changes and revisions were made in the light of the expert opinions and the tool served its intended purpose and represented the intended field on assessment. The validity of the content was ensured as a result of expert opinions and recommendations.

Two coefficients were evaluated the reliability study of the WIST: the internal consistency coefficient and the test–retest correlation coefficient. The Cronbach Alpha coefficient, which is an internal consistency coefficient, is an indicator of internal consistency and homogeneity of the items of the tool. The Cronbach alpha coefficient is a value between -1 and $+1$. The higher the internal consistency coefficient of the instrument, the more consistent and similar are the tool items with each other (Gözüm & Aksayan, 2003). The Cronbach Alpha coefficient of the WIST is 0.82. The Cronbach Alpha coefficients of the sub-dimensions of the test range between 0.68 and 0.90. In the study conducted by Wurtele et al. (1998), the Cronbach Alpha coefficient for the WIST was 0.90 and ranged between 0.75 and 0.88 for the sub-dimensions of the test. The WIST test–retest results in the study by Wurtele et al. (1998) was 0.83. The WIST test–retest reliability coefficient for this study was 0.89. The lowest coefficient for the test–retest reliability in this study was for the sub-dimension report skill (0.48). In the study by Wurtele et al. (1998), the test–retest reliability for sub-dimensions ranged between 0.54 and 0.84 and the lowest reliability coefficient was for the PSQ sub-dimension. This study found a reliability of 0.82 for the PSQ sub-dimension. The test–retest reliability coefficients for the sub-dimensions of the scale ranged between 0.48 and 0.92.

One method for evaluating the construct validity of a instrument is the “known-group” comparison method. If the known group performs as expected as a result of the test, it means that the instrument has a “feature selection” attribute and can carry this out (Gözüm & Aksayan, 2003). With the known-groups method, a comparison was made to see whether there was a difference between the WIST and sub-dimension score averages according to sex. It was found that the sex of the child did not affect the score averages for WIST and sub-dimension.

Conclusions

The reliability and validity analysis of the ‘What If’ Situations Test (WIST), used to evaluate pre-schoolers’ skills regarding self-protection against sexual abuse, showed that the Test’s adaptation to Turkish culture was reliable and valid. It is recommended that the WIST instrument be used by professionals working with children in research aimed to prevent sexual abuse.

Studies concerning the effectiveness of universal or specific interventions regarding child abuse in low and middle income countries are found to be inadequate (Mikton & Butchart, 2009). Similarly, there is also a need for more research in this area in Turkey. Research to be conducted with WIST in a variety of sectors (such as education, health, justice) shall contribute to obtaining evidence based data for researchers in their studies.

It is stated that childhood sexual abuse is a significant problem and methodological issues contribute to the reporting of child abuse (Stoltenbergh et al., 2011). The WIST can be used effectively in the process of reporting on cases of sexual abuse.

The use of correct terminology of all parts of the body are considered necessary for the development of a healthy and positive body image (Kenny & Wurtele, 2008). Children should be able to inform a trusted adult about inappropriate touching of the “private parts” by someone which may be considered as potential abuse. Other terms are used in Turkish culture to indicate “private parts”. Many Turkish children do not know the term or what consists of the “private parts”. Thus, the first vignette of the WIST is a definition of private parts (*Private parts are the parts of the body which are covered by underwear or swimsuits*). This study can make the use of correct terminology widespread, which in turn can contribute to the healthy sexual development of Turkish children.

Limitations and implications

Although the WIST is a valid and reliable psychometric measurement tool regarding the prevention of sexual abuse, it has some limitations. Firstly, this study was conducted with a small group of children in schools under the supervision of the Turkish Ministry of Family and Social Policies. However, there are also schools which are under the supervision of the Turkish Ministry of National Education. Future studies may be conducted with different sample groups (e.g., pre-schools under the supervision of the Turkish Ministry of National Education, pediatric clinics of hospitals and orphanages)

Another limitation of the study concerns the sample. Although the sample size was adequate for the study, the sample only comprised of children of volunteer parents. Furthermore, the children in the sample were those living in urban areas. The social norms regarding sexual abuse may vary between the rural and urban areas; thus, there is also a need to conduct studies with children living in rural areas.

Such limitations of this study may give lead to future studies in this area. Additionally, researchers may further investigate the psychometric properties of the WIST by using other instruments.

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Declaration of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article

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