

Validity and reliability update of the Indonesian version of International Society for Prevention of Child Abuse and Neglect - Child Abuse Screening Tool (ICAST-C)

Meita Dhamayanti, Anne Dian Rachmawati, Anindita Noviandhari

Abstract

Background In Indonesia, few screening tools for child abuse and neglect are available. The currently-favored tool was adapted from the *International Society for Prevention of Child Abuse and Neglect (ISPCAN)-Child Abuse Screening Tool (ICAST-C)* questionnaire, consisted of 5 domains child abuse and 59 items.

Objective To re-evaluate the validity and reliability of the Indonesian version of ICAST-C.

Methods A cross-sectional study was conducted on 480 children aged 11-18 years from junior and senior high schools in Bandung, West Java, Indonesia. Subjects were selected using two-stage cluster sampling. A validity test using Spearman's rank correlation with $R_s \geq 0.3$ was considered valid. A reliability test using Cronbach's alpha formula with alpha score ≥ 0.7 was considered reliable.

Results Most items in the Indonesian version of ICAST-C were valid and reliable, except for the following 9 out of 59 items: "anyone in your home used alcohol", "seen adults in your home use knives", "insulted you by calling you dumb", "in order stop or change behavior", "forbade you from going out", "pinched you", "explained to you why something you did was wrong", "gave you something else to do (in order to stop or change behavior)", and "took away privileges or money". The ICAST-C reliability was good (0.919), however domain of violence exposure (0.483) and neglect (0.445) were not so good.

Conclusion The updated Indonesian version of ICAST-C is considered valid and reliable as a screening tool for child abuse. [Paediatr Indones. 2020;60:218-23; DOI: 10.14238/pi60.4.2020.218-23].

Keywords: child abuse; neglect; screening tool; Indonesian version of ICAST-C

Child abuse or maltreatment or violence against children (VAC) is any kind of physical and mental violence, sexual abuse, neglect or negligent treatment, and commercial or other exploitation, that has high likelihood of resulting in actual or potential harm to child health, survival, development, dignity, responsibility, belief, or rights.¹⁻⁴ According to the *World Health Organization (WHO)*, 25-50% of children are victims of physical violence, while 20% of girls and 5-10% of boys are victims of sexual abuse.⁵

Indonesian Ministry of Health reports incidence of violence against children increases each year. Most of violence against children cases was found in health facilities and/or police departments. The iceberg phenomenon is considered since a lot of unreported cases. The Indonesian culture or norms may caused of low of detection rate of violence against children. Moreover case was founded on severe violence or

From the Department of Child Health, Dr. Hasan Sadikin Hospital, Faculty of Medicine Universitas Padjadjaran, Bandung, West Java, Indonesia.

Corresponding author: Meita Dhamayanti. Department of Child Health, Hasan Sadikin Hospital, Faculty of Medicine, Universitas Padjadjaran. Jl Pasteur 38, Bandung 40191. Phone: 0222035957. Email: meita.dhamayanti@unpad.ac.id.

Submitted April 9, 2019. Accepted July 29, 2020.

even death.² Screening tools to detect violence against children established and applied in Indonesia include the ICAST-C (Indonesian version), *Parent-Child Conflict Tactics Scale*, *Adverse Childhood Experiences Study Questionnaire* (ACEs), and the *Lifetime Victimization Screening Questionnaire*.^{1,6-8} ICAST-C is generally accepted as the best, since it includes five violence domains (violence exposure, physical, psychological, sexual, and neglect).^{8,9}

The Indonesian version of ICAST-C has followed five translation phases, cultural adaptation, and initial validity and reliability testing.⁶ The original ICAST-C was used to collect information on neighborhood violence. It has been analyzed by more than 130 experts from 43 countries and adapted into 20 languages, with valid and reliable results using Cronbach's alpha analysis.⁹⁻¹¹ This study was done to evaluate the validity and reliability of the Indonesian version of ICAST-C. The questionnaire passed the translation and cross-cultural adaptation phases before being applied in Indonesia.¹²⁻¹⁴ The results of this study can potentially be used to improve the validity and reliability of the tool by updating question phrasing and order.

Methods

This cross-sectional study was done on junior and senior high school students aged 11-18 years in Bandung, West Java, Indonesia, from August to November 2016. Subjects were included using two-stage cluster sampling. First, several schools were selected (2 primary and 2 secondary high schools) then the adequate number of students was determined by a simple random sampling method. The minimum required sample size was 255 subjects based on the formula:

$$n = \left[\frac{Z_{\alpha} + Z_{\beta}}{0.5 \ln(1+r)/(1-r)} \right]^2 + 3$$

Z_{α} = alpha standard deviation (1.96)

Z_{β} = beta standard deviation (1.64)

r = minimal significant correlation (0.5)

Children who refused to join the study or were unavailable to return the informed consent

form were excluded. We used Indonesian version of ICAST-C questionnaire, which was a self-report questionnaire, consisted of 5 child abuse domains and 59 items (7 violence exposure, 18 physical, 19 psychological, 4 sexual, and 11 neglect). Subject filled the ICAST-C questionnaire anonymously in the classroom, supervised by the teacher and assistant investigator. Subject who were unable to completely fill the questionnaire were considered to be dropped out of the study.

The item validity of ICAST-C was assessed by Spearman's rank correlation. Reliability or internal consistency was assessed by Cronbach's alpha analysis. Spearman's rank correlation coefficient was considered to be valid for $r_s \geq 0.3$, while internal consistency was considered to be reliable for Cronbach's alpha ≥ 0.7 . Data processing was performed with SPSS software version 21.0. This study was approved by the Health Research Ethics Committee, Faculty of Medicine, Universitas Padjadjaran.

Results

A total of 500 consent forms were distributed to students at the chosen schools, 480 of whom were included in the study. A total of 20 students were excluded due to not returning the signed parental informed consent form (9 students) and refusing to join the study (11 students). Questionnaires were filled anonymously and all had complete data.

Subjects' characteristics data were included sex, age, parental education, number of family members, neighborhood, and race as presented in **Table 1**. Subjects' ages ranged from 11 to 18 years with a mean of 14.87 (SD 1.80) years. Parental education varied from elementary school to post-graduate, with an average educational level of senior high school (36.5% of fathers and 40.4% of mothers). Most subjects had small families (≤ 4 family members) (93.8%), lived with their parents (85.8%), and were Sundanese (72.9%).

The item validity of violence exposure domain, resulting 2 out of 7 items were not valid. Those items were exposure to "anyone in your home used alcohol" and "seen adults in your home use knives" (**Table 2**). The item validity of psychological violence domain revealed, 3 out of 19 items were not valid: "insulted

Table 1. Subjects' characteristics

Characteristics	N=480
Gender, n (%)	
Male	232 (48.3)
Female	248 (51.7)
Age, years	
Mean (SD)	14.87 (1.80)
Median (range)	15.00 (11.00-18.00)
Education, n (%)	
Paternal	
Elementary	40 (8.3)
Junior high	34 (7.1)
Senior high	175 (36.5)
Diploma	33 (6.9)
Bachelor's	13 (2.7)
Magister-doctoral degree	135 (28.1)
Not known	50 (10.4)
Maternal	
Elementary school	54 (11.3)
Junior High school	42 (8.8)
Senior high school	194 (40.4)
Diploma	42 (8.8)
Bachelor	106 (22.1)
Magister-doctoral degree	8 (1.7)
Not known	34 (7.1)
Birth position in the family, n (%)	
First born	170 (35.4)
Middle	116 (24.2)
Last	165 (34.4)
Single	29 (6.0)
Number of family members, n (%)	
≤4	450 (93.8)
>4	30 (6.3)
Living with, n (%)	
Parents	412 (85.8)
Relatives	59 (12.3)
Dormitory/orphanage	9 (1.9)
Ethnicity, n (%)	
Sundanese	350 (72.9)
Javanese	37 (7.7)
Sumateranese	12 (2.5)
Betawinense	3 (0.6)
Mixed	78 (16.3)

you by calling you dumb”, ” gave you something else to do (in order to stop or change behavior),” and “forbade you from going out” (Table 3). Of the 18 item of physical violence domain, only “pinched you” was considered invalid (Table 4). Regarding on neglect domain, 3 of 11 items were not valid: “explained to you why something you did was wrong,” “gave you a reward for behaving well” and “took away privileges or money” (Table 5). In addition, all 4 variables in the sexual abuse domain were considered valid (Table 6).

The reliability test was assessed by internal consistency of one session analysis. A group of items was considered reliable and success in analyzing

Table 2. Item validity test for violence exposure

No	Variables	Rs	Conclusion
1	Has anyone in your home used alcohol (q1.12)	0.179	Invalid
2	Shouting and screaming (q1.13)	0.485	Valid
3	Hurting each other (q1.14)	0.482	Valid
4	Seen adults in your home use knives (q1.15)	0.271	Invalid
5	Anyone close to you has been murdered (q4.1)	0.413	Valid
6	Living with violence (q4.2)	0.692	Valid
7	Has anyone come into your home and stolen something (q4.3)	0.689	Valid

Table 3. Item validity test for psychological violence domain

No	Variables	Rs	Conclusion
1	Tried to embarrass you because you (q1.16)	0.178	Invalid
2	Shouted, yelled, or screamed at you very loudly (q2.1)	0.438	Valid
3	Insulted you by calling you dumb, lazy (q2.2)	0.476	Valid
4	Cursed you (q2.3)	0.632	Valid
5	Blamed you for his/her misfortune (q2.5)	0.602	Valid
6	Told to stop or start doing something (q2.6)	0.326	Valid
7	Told to change behavior (q2.9)	-0.098	Invalid
8	Forbade you from going out (q2.11)	0.196	Invalid
9	Embarrassed publicly (q2.12)	0.562	Valid
10	Said wish you were dead or never been born (q2.13)	0.551	Valid
11	Threatened to leave or abandon (q2.14)	0.646	Valid
12	Locked out (q2.15)	0.613	Valid
13	Threatened with words (q2.16)	0.609	Valid
14	Threatened to hurt or kill (q2.17)	0.576	Valid
15	Referred to you skin color/gender/religious (q2.37)	0.537	Valid
16	Embarrassed because orphan (q2.38)	0.515	Valid
17	Stopped you from being with others (q2.39)	0.572	Valid
18	Stole/broke your belongings (q2.40)	0.476	Valid
19	Threatened with bad marks that were undeserved (q2.41)	0.607	Valid

the item if the reliability coefficient was ≥ 0.7 . The Cronbach's alpha results are presented in Table 7. The variables had alpha values of 0.483 to 0.966. The violence exposure as well as negligence domains had alpha values of 0.483 and 0.445, respectively, so they were interpreted as unreliable. The total alpha value of 59 items was 0.919, hence, the Indonesian version of ICAST-C was considered to be reliable and valid.

Table 4. Item validity test for physical violence domain

No	Variables	Rs	Conclusion
1	Kicked (q2.18)	0.607	Valid
2	Shook aggressively (q2.19)	0.499	Valid
3	Slapped on the face or back of head (q2.20)	0.655	Valid
4	Hit on the head with knuckles (q2.21)	0.693	Valid
5	Spanked on the bottom with bare hand (q2.22)	0.501	Valid
6	Hit on the buttocks with an object (q2.23)	0.701	Valid
7	Hit elsewhere (not buttocks) with an object (q2.24)	0.664	Valid
8	Hit over and over (q2.25)	0.669	Valid
9	Choked (q2.26)	0.652	Valid
10	Burned, scalded, or branded (q2.27)	0.595	Valid
11	Put hot pepper, soap or spicy food in your mouth (q2.28)	0.615	Valid
12	Locked you up or tied you to restrict (q2.29)	0.656	Valid
13	Twisted your ear (q2.30)	0.354	Valid
14	Pulled hair (q2.31)	0.560	Valid
15	Pinched you (q2.32)	0.181	Invalid
16	Force to stand, sit, or kneel and causing pain (q2.33)	0.673	Valid
17	Put in time-out (q2.34)	0.622	Valid
18	Given drugs or alcohol (q2.36)	0.640	Valid

Table 5. Item validity test for neglect domain

No	Variables	Rs	Conclusion
1	You did not get enough to eat and or drink (q3.1)	0.575	Valid
2	You had to wear clothes that were dirty, torn, or inappropriate (q3.2)	0.467	Valid
3	You were not taken care of when you were sick/injured (q2.3)	0.600	Valid
4	Lack of supervision (q2.4)	0.597	Valid
5	Feeling uncared for (q2.5)	0.654	Valid
6	Feeling unimportant (q2.6)	0.719	Valid
7	Ignored (q2.4)	0.484	Valid
8	Explained to you why something you did was wrong (q2.7)	-0.058	Invalid
9	Gave you a reward for behaving well (q2.8)	-0.010	Invalid
10	Took away privileges or money (q2.10)	-0.019	Invalid
11	Withhold meal as punishment (q2.35)	0.473	Valid

Table 6. Item validity test for sexual abuse domain

No	Variables	Rs	Conclusion
1	Made to look private parts	0.947	Valid
2	Made to touch private parts	0.950	Valid
3	Made a sex video or took photographs	0.931	Valid
4	Forced to have sex	0.933	Valid

Table 7. Internal consistency (Cronbach's alpha) of the 5 domains

Domain	Violence exposure	Psychological violence	Physical violence	Neglect	Sexual abuse
# Number of item	7	19	18	11	4
Alpha	0.483	0.805	0.879	0.445	0.966

Discussion

The International Society for Prevention of Child Abuse and Neglect (ISPCAN)-Child Abuse Screening Tool (ICAST-C) to detect violence against children was developed by the United Nations Secretary-General. It was designed for application in cross-cultural and multinational research on violence against children in various countries and times.¹¹

The first study of the Indonesian version of ICAST-C showed that it had good validity and reliability (Kuder-Richardson score 0.919).⁶ In our study with 480 junior and senior high students aged 11 to 18 years in Bandung, the validity of items for 5 domains of violence against children was analyzed by Spearman's rank correlation coefficient. Our subjects

were from different social classes or social groups. As such, subjects varied by income, class, race, ethnicity, and/or dialect to ensure that we catch challenges to completion of the questionnaire unique to those factors. Since subjects completed the questionnaires in group settings, they were prohibited from asking other subjects how they answered questions or from seeing how others answered specific questions.

We found the ICAST-C Indonesian version to be valid except for 9 of 59 variables. Those items were "has anyone in your home used alcohol (q1.12)", "seen adults in your home use knives", "tried to embarrass you because you", "instructed to change behavior", "forbade you from going out", "pinched you", "explained to you why something you did was wrong", "gave you a reward for behaving well", and "took

away privileges or money". A study of the Brazilian-Portuguese adaptation of ICAST-C noted that 7 of 59 variables were not valid and had to be changed or eliminated.¹⁵

A previous study showed reliable alpha values for three ICAST instrument ranging from 0.69 to 0.89.¹¹ However, in our study the total alpha value was 0.919, which was considered to be very good reliability, despite the unreliable alpha values for domains of violence exposure and neglect (0.483 and 0.445, respectively). Another study also reported a less reliable alpha value (0.69) for the violence exposure domain.¹⁰

To our knowledge, the Indonesian version of ICAST-C has not been compared to other instruments, thus, there is no available data on criterion-related validity, sensitivity, and specificity. The limitation of this study was the lack of test-retest reliability and construction and criterion-related validity of the Indonesian version of ICAST-C compared to other questionnaires. In addition, the Indonesian version of ICAST-C does not include the frequency and classification of violence type, which makes severity assessment challenging. A suggestion for further study is to include the frequency of violence and classification of violence (severe or mild). We believe it would be helpful for the reporting system and management of violence against children.

In conclusion, the Indonesian version of ICAST-C still needs improvement on 9 of 59 invalid items. Further study is needed to analyze criterion-related validity, sensitivity, and specificity of ICAST-C compared to other screening tools.

Conflict of Interest

None declared.

Acknowledgements

Many thanks to all the staff, students and teachers at four Bandung schools for their contribution to this study and to field research medical doctors of the Faculty of Medicine, Universitas Padjadjaran for their faithful efforts. We also thank Anindita Noviandhari for manuscript revision, Ovamelia Julio for language editing, and the Health System Research Center of Faculty of

Medicine, Universitas Padjadjaran for permission to use the Indonesian version of ICAST-C.

Funding Acknowledgment

Funding for this study was obtained from an Indonesian Pediatric Society Grant (355/Legal/FFI/XII/2014).

References

1. WHO, IPSCAN. Preventing child maltreatment: A guide to taking action and generating evidence. Geneva: WHO Press; 2006.p.17-26.
2. Kementrian Kesehatan RI, UNICEF. Pedoman rujukan kasus kekerasan terhadap anak. Jakarta: Bina Kesehatan Masyarakat; 2007. p. 34-40.
3. Gilbert R, Fluke J, O'Donnell M, Gonzalez-Izquierdo A, Brownell M, Gulliver P, et al. Child maltreatment: variation in trends and policies in six developed countries. *Lancet*. 2012;379:758-72. DOI: 10.1016/S0140-6736(11)61087-8.
4. UNICEF. Convention on the rights of the child. UNICEF. 1989. [cited 2017 December 10]. Available from: <https://www.unicef.org/child-rights-convention>.
5. WHO. Facts of child abuse and neglect. World Health Organization. 2002. [cited 2017 December 15]. Available from: https://www.who.int/violence_injury_prevention/violence/world_report/factsheets/en/childabusefacts.pdf?ua=1.
6. Dhamayanti M, Rachmawati AD, Arisanti N, Setiawati EP, Rusmi VK, Sekarwana N. Validitas dan reliabilitas kuesioner skrining kekerasan terhadap anak "ICAST-C" versi Bahasa Indonesia. *J Keperawatan Padjadjaran*. 2018;5. DOI: 10.24198/jkp.v5i3.650.
7. Ritacco G, Suffla S. A critical review of child maltreatment indices: psychometric properties and application in the South African context. *African Safety Promotion J*. 2012;10:1-15. [cited 2017 November 15] Available from: <http://hdl.handle.net/2440/105975>.
8. Hamby SL, Finkelhor D. Choosing and using child victimization questionnaires. *Office of Juvenile Justice and Delinquency Prevention Bulletin*. Washington DC: US Department of Justice; 2001. p. 1-15.
9. Runyan D, Brandspigel S, Zolotor A, Dunne M. Manual for administration: The ISPCAN child abuse screening tool (ICAST). International Society for the Prevention of Child Abuse and Neglect (ISPCAN). Denver: ISPCAN; 2015.

- p. 1-10.
10. Zolotor AJ, Runyan DK, Dunne MP, Jain D, Peturs HR, Ramirez C, *et al.* ISPCAN child abuse screening tool children's version (ICAST-C): instrument development and multi-national pilot testing. *Child Abuse Negl.* 2009;33:833-41. DOI:10.1016/j.chiabu.2009.09.004.
 11. Runyan DK, Dunne MP, Zolotor AJ. Introduction to the development of the ISPCAN child abuse screening tools. *Child Abuse Negl.* 2009;33:842-5. DOI: 10.1016/j.chiabu.2009.08.003.
 12. Kind P, Ian McDowell. Measuring health: a guide to rating scales and questionnaires. *Public Health.* 2008;122:217-217. DOI: 10.1016/j.puhe.2007.04.003.
 13. Ljungberg AK, Fossum B, Furst CJ, Hagelin CL. Translation and cultural adaptation of research instruments- guidelines and challenges: an example in FAMCARE-2 for use in Sweden. *Inform Health Soc Care.* 2015;40:67-78. DOI:10.1177/2333393618807380.
 14. Beaton D, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine.* 2000;25:3186-91. DOI:10.1097/00007632-200012150-00014.
 15. Silveira ALS, Grassi-Oliveira R. Semantic validation of the ISPCAN child abuse screening tools (ICAST) in Brazilian Portuguese. *Trends Psychiatry Psychother.* 2016;38:105-10. DOI: 10.1590/2237-6089-2016-0012.