

Adaptation of the Spanish-version of the Childhood Trauma Questionnaire - Short Form (CTQ-SF) as an informant-based instrument

José M. Tomás¹, Irene Fernández¹, José-Javier Navarro-Pérez² and Ángela Carbonell²

¹Department of Methodology for the Behavioral Sciences, University of Valencia

²Department of Social Work and Social Service, University of Valencia

Corresponding author: José-Javier Navarro-Pérez. Department of Social Work and Social Services, University of Valencia. Tarongers Avenue, 4B, 46021 Valencia (Spain). Email: J.Javier.Navarro@uv.es

ORCIDs

José M. Tomás ORCID: 0000-0002-3424-1668

Irene Fernández ORCID: 0000-0001-7333-3015

José J. Navarro-Pérez ORCID: 0000-0001-6363-7154

Ángela Carbonell ORCID: 0000-0003-2180-4123

Acknowledgements

This work was supported by “Cátedra Luis Amigó para la promoción de niños, niñas, adolescentes y jóvenes” [Ref. OTR2009_07233 CATED_CC32232].

Compliance with Ethical Standards

Conflict of Interest. The authors report there are no competing interests to declare.

Research Involving Human Participants. This research complied with APA's ethical standards, and it was approved by the Ethical Commission of the Valencian Government (CSV:HYH5NVSA-Y85ZSB11-RML6ZCYX).

Informed Consent. The children's data were all anonymous, and all professionals signed informed consents.

Data availability statement. The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Abstract

Background. There is a lot of disparity between prevalence rates of child maltreatment from informant studies and from studies using self-report measures. However, there is not an instrument that can be completed by both the child/adolescent and a clinician. The aim of this study is to adapt the Childhood Trauma Questionnaire-Short Form (CTQ-SF) to be completed by professional workers, **so as to provide with one instrument that can be applied to both self and informant-based sources of report in order to study the effect of the source of report on the prevalence rates of child maltreatment.** *Methods.* A sample of 273 professionals provided evidence about 635 children/adolescents. Professionals assessed child maltreatment with the adapted version of the CTQ-SF and with the Children Risk of Abuse and Maltreatment Parental Scale (ACRAM-PS). We tested factor structure using frequentist and Bayesian Confirmatory Factor Analyses (CFA). Reliability was estimated using Composite Reliability Index. Discriminant and convergent validity were assessed using the ACRAM-PS as a criterion. *Results.* Bayesian CFA with near-zero priors found a very good five-factor solution and the estimates of reliability were adequate for all dimensions. We also found support for the convergent validity of the adapted CTQ-SF with the dimensions of the ACRAM-PS.

Conclusions. Psychometric properties of the adapted CTQ-SF are equivalent to those found in previous psychometric studies of the original CTQ-SF. Therefore, both instruments could be used simultaneously to explore the prevalence of abuse and neglect.

Key words: child maltreatment; abuse; neglect; validity; reliability; Bayesian confirmatory factor analysis

Introduction

Child maltreatment involves the perpetration of violence (physical, emotional or sexual) and neglect against persons aged under 18 years, by parents, caregivers or other authority figures (World Health Organization, WHO; 2016). Maltreatment during childhood and adolescence is associated with emotional suffering, disorders that affect the child's personality (Hsieh et al., 2020; Meadows et al., 2022), risky sexual behaviors (Norman et al., 2012) and other maladjusted behaviors that become evident in adulthood (Kisely et al., 2020), which in many cases require clinical intervention. Thus the detection and evaluation of child abuse is essential to guarantee children's well-being. However, **child maltreatment** is a complex and multidimensional construct (Georgieva et al., 2021), and its study is muddled by the heterogeneity in its definition, measurement, and sources of report.

Nowadays, the level of abuse among children and adolescents is yet extraordinarily high (Evans et al., 2014). However, Stoltenborgh et al. (2015) carried out a review of meta-analytic studies estimating the prevalence of **child maltreatment** and found great disparity between prevalence rates of informant studies and those coming from studies using self-report measures of abuse. **Namely, prevalence rates for informant-based data were lower than those coming from self-report data (Stoltenborgh et al., 2015). These authors suggest that the disparity can be due to informant studies covering only those situations that leave institutional records. Moreover, these authors also suggest that the disparity can be due to the time period**

considered by self-report and informant-based studies when measuring maltreatment, which usually is substantively longer for the former than for the latter (Stoltenborgh et al., 2015). Therefore, the use of different measurement characteristics of both types of studies could account for inconsistencies on the estimates found by different studies.

There is a substantial amount of measurement instruments tackling child maltreatment. Yoon et al. (2021) performed a systematic review of the content validity of parent/caregiver-report child maltreatment instruments and found 15 different instruments. All 15 instruments were targeted at either both parents, mothers only or caregivers. After examining evidence of content validity, authors concluded there was not sufficient evidence for any of the scales (Yoon et al., 2021). On the other hand, Saini et al. (2019) conducted a systematic review on the content validity of self-report and clinician interview child maltreatment instruments and identified 52 additional instruments. From these, only 13 were clinician interviews but they did not cover both abuse and neglect aspects of maltreatment or did not provide evidence of adequate psychometric properties.

Among all these instruments, the WHO's Violence info webpage (<https://apps.who.int/violence-info/>) mentions four as the most widely used for assessing the prevalence of child maltreatment: Adverse Childhood Experiences (ACE; Felitti et al., 1998), Juvenile Victimization Questionnaire (JVQ; Hamby et al., 2005), International Child Abuse Screening Tool (ICAST; Dunne et al., 2009; Runyan et al., 2009; Zolotor et al., 2009), and Parent-Child Conflict Tactics Scale (PC-CTS; Straus et al., 1998). However, each of these instruments addresses different areas or dimensions of maltreatment. The ACE tackles abuse, household challenges and neglect, the JVQ covers child maltreatment in general, peer and sibling victimization, sexual victimization, conventional crime, and witnessing and other exposure to violence, and the PC-CTS is a parent and self-report measure of nonviolent discipline, psychological aggression, physical assault, neglect and sexual abuse. The ICAST,

in its part, has several versions: one for the parents and three for children (retrospective, child at home, and child within institutions). All these instruments have shown evidence of content validity, but none of them has reports on their factor structure, that is, evidence that their items measure the theoretical dimensions they are assumed to measure. Finally, only two of them (JVQ and PC-CTS) report limited evidence on internal consistency (Finkelhor et al. 2005; Saini et al., 2019; Straus et al., 1998). Therefore, there is an evident need to make standardized diagnostic tools available that present adequate psychometric properties.

Among existing scales aimed at child maltreatment measurement, both Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998), and its shortened version, CTQ-Short Form (CTQ-SF; Bernstein et al., 2003), present sound psychometric results (Georgieva et al., 2021; Saini et al., 2019). The CTQ (Bernstein & Fink, 1998) is a self-administered retrospective instrument designed to assess child maltreatment. It contains 70 items divided into five dimensions: physical, emotional and sexual abuse, and physical and emotional neglect.

A few years after the development of the CTQ, the CTQ-SF (Bernstein et al., 2003), was developed as a brief version of the instrument aimed at shortening administration time and providing a rapid screening of maltreatment. This scale contains 28 items, five items tap each of the five dimensions of maltreatment originally considered in the CTQ, and three additional items control for social desirability. In recent years, this instrument has been extensively used for research in many different samples such as convicts (Zheng et al., 2021), pregnant women (Schmidt et al., 2020), juvenile offenders (Kongerslev et al., 2019), adolescents, substance users, psychiatric patients (Dudeck et al., 2015) and street youth (Forde et al., 2012). Because of its widely proven psychometric properties and its shorter length, this instrument has been one of the most commonly administered over the last ten years (Schmidt et al., 2020).

However, all these measures are self-report or caregiver-report instruments, which could distort the responses due to social desirability or stigma avoidance (Negriff et al., 2017), adding to the reasons why so much disparity on prevalence estimates has been found between informant and self-report studies (Stoltenborgh et al., 2015). In order to study the effect of the source of report on the prevalence rates of child maltreatment, we need to guarantee that the differences in estimates are not a consequence of the instrument employed. One way to ensure this is to apply the same instrument to both self and informant-based sources of report.

Up to our knowledge, there is not an instrument that can be completed by both the child/adolescent and a clinician or other professionals within the Child Welfare System. Therefore, the aim of this study is to adapt the CTQ-SF to be completed by professional workers within the Child Welfare System. We chose the CTQ-SF (Bernstein et al., 2003) because it is one of the most validated screening instruments for detecting childhood trauma (Schmidt et al., 2020) and stands out for being easy to administer. Indeed, Saini et al. (2019) conclude that it is one of the three instruments with the strongest psychometric properties in the child maltreatment arena. It has been validated in different populations from very different countries (Georgieva et al., 2021), and includes a validation into Spanish (Hernandez et al., 2013). After the instrument is adapted and administered to a sample of Child Welfare System professionals, we will examine its psychometric properties, namely: factor structure, internal consistency and convergent and discriminant validity.

Method

Design, participants, and procedure

This study is a cross-sectional part of a larger longitudinal study of children at risk in the XXX (XXX). This research meets APA's ethical standards and was approved by the Ethics Commission of the ##### (Ref. #####). Data were gathered from professionals

within the **Child Welfare System** who provided information about 635 children and adolescents from different cities in the XXX (XXX), whose ages ranged from 0 to 18 years (Mean= 12.16, SD= 5.24). 41.9% of children and adolescents were girls, 57.5% boys and 0.6% of the sample declared themselves as “other” gender.

A total of 273 professionals participated in the study, 77.3% of them were female, 20.5% were male and 2.2% identified as other gender. They had an average of 9.56 (SD = 7.95) years of experience in the **Child Welfare System** and came from different services: family foster care (5.9%), community centers for young and adolescents (7.3%), emancipated foster youth (3.7%), reception centers (11.9%), residential foster care (29.7%), juvenile justice centers (8.9%), social services (30.5%) and other (1.9%). All data about the children was anonymously recorded and all the professionals provided their signed informed consent to participate in the study.

Instruments

- *Childhood Trauma Questionnaire - Short Form* (CTQ-SF; Bernstein et al., 2003), a retrospective measure composed of 25 items to assess various types of childhood abuse and maltreatment along with 3 items to detect minimization and negation. Each type is assessed by five items (emotional abuse, physical abuse, sexual abuse, physical neglect and emotional neglect). All items are scored on a 5-point Likert scale from 1 (never true) to 5 (very often true). The instrument was translated into Spanish and back-translated by a bilingual speaker of English and Spanish. In the process, items were also adapted for informant-based administration. **The adaptation mainly included changing the past tense forms of some of the items to present tense forms, although some items remained with the past tense form as they measure the occurrence of specific events, and changing the subject of the items to third person. For example: “the child/adolescent wears dirty clothes” instead of “I had to wear dirty clothes”, and “someone tried to make the child/adolescent do sexual**

things or watch sexual things” instead of “someone tried to make me do sexual things or watch sexual things”. A panel of five experts of both child maltreatment and measurement instruments reviewed the translation and adaptation until agreement was achieved on the final Spanish version.

- *Children Risk of Abuse and Maltreatment Parental Scale (ACRAM-PS; AUTHORS, 2022).* This scale is composed of 12 dimensions with two to three indicators per dimension. A Confirmatory Factor Analyses of the scale found a good model fit: $\chi^2(463) = 1220.76$, $p < .001$, CFI= .958, RMSEA= .051 90%CI [.047 - .054]. Regarding the reliability of the dimensions, composite reliability indexes (CRI) for internal consistency were calculated for each dimension. The CRI values for each dimension are: parental variables and corruption (.725); neglect of physical needs (.923); neglect of safety needs (.855); neglect of educational needs (.795); neglect of mental needs (.960); physical maltreatment (.743); emotional maltreatment (.863); usage and abandonment (.907); sexual abuse (.979); prenatal maltreatment/risk (.890); labor exploitation and begging (.969); parental inability to control the child/adolescent’s behavior (.844).
- *Other demographic questions.* Several other sociodemographic variables were also recorded, such as gender, age, whether there was an institutional resolution of the status of the case, and number of siblings.

Statistical analyses

First, descriptive statistics of the modified items of the CTQ-SF were computed. Then, the factor structure of the scale was analyzed through confirmatory factor analysis (CFA) using both frequentist (maximum likelihood robust, MLR) and Bayesian (BCFA) estimations. Several statistical tests and indexes were combined to assess model fit. Specifically, in the frequentist estimation we used a) chi-square, b) CFI, c) RMSEA and d) BIC for model comparisons. Non-significance of the chi-square test, values larger than .90 for the CFI, values

lower than .08 for the RMSEA and lower relative values for the BIC are indicative of good fit (Hu & Bentler, 1999). For the BCFA, the Bayesian counterparts of these indexes were used: Posterior Predictive p-value (PPp), BCFI, BRMSEA and DIC. In the BCFA, an acceptable model fit is when the PPp is above .05 and the 95% lower limit is negative. The BCFI and BRMSEA are interpreted as in the frequentist approach, and a lower DIC suggests a better model fit. Analyses were carried out using SPSS 26 and Mplus 8.7 (Muthén & Muthén, 1998-2017).

Two independent Markov Chain Monte Carlo (MCMC) procedures were used for BCFA (Asparouhov et al., 2015) with 100,000 iterations. To be specific, we used Muthén and Asparouhov's (2012) new statistical approach to CFA: BCFA with near-zero cross-loadings. This approach allows simultaneous estimation of all cross-loadings by using approximate near-zero informative priors to replace the exact zeroes for the cross-loadings. Two sets of priors were used for BCFA: diffuse priors without cross-loadings (i.e. the cross-loadings were fixed to exact zero) and BCFA with informative priors for all cross-loadings. Multiple variance hyperparameters (.001, .005, .01 and .05) were tested to check the sensitivity of the priors. The best compromise between model fit and cross-loadings size was achieved with a variance hyperparameter of 0.005. Therefore, the informative priors were normal with mean hyperparameters set to zero and a small variance hyperparameter of 0.005, which yields cross-loading boundaries of ± 0.14 (Muthén & Asparouhov, 2012). Model convergence was monitored by potential scale reduction (< 1.10 suggesting convergence) and checking of trace and autocorrelation plots.

Convergent and discriminant validity was assessed through correlations between the dimensions of the adapted version of the CTQ-SF and the ACRAM-PS, while the internal consistency of the scale was assessed using the CRI (composite reliability index). Construct validity was assessed by hypothesis testing, that is, the adapted CTQ-SF dimensions were

compared by gender. These additional analyses were carried out using SPSS v.26 (IBM Corp, 2017).

Results

Descriptive statistics

Table 1 displays items content of the adapted version of the CTQ-SF as an informant-based instrument, together with descriptive statistics for each item.

INSERT TABLE 1 ABOUT HERE

Factor structure

Confirmatory factor analyses using both methods were applied. Specifically, the *a priori* or theoretical CFA models tested were 1) the theoretical five-factor structure with frequentist estimation, 2) a Bayesian five-factor model with non-informative priors, and 3) a Bayesian five-factor model with near zero priors.

We first tested the theoretical model of the original CTQ-SF (Bernstein et al., 2003) following a frequentist approach with an MLR estimation. The model fit was not acceptable according to the criteria mentioned above (i.e. statistically significant chi-square test, CFI under .90 and RMSEA over .08). In cases where the fit indexes in CFA are not adequate with MLR, Schmitt et al. (2018) recommend BSEM to identify the source of the model misfit. We therefore performed three Bayesian estimations: 1) default priors without allowing any cross-loadings between factors, 2) near-zero priors allowing minimal cross-loadings between factors, and 3) near-zero priors maintaining only the cross-loading indicators from the previous model that were statistically significant. The best-fitting model was the third one: a five-factor structure with near-zero priors with only those indicators that significantly cross-loaded in the second model. This was the model that we retained. The goodness-of-fit indexes for all the models are shown in Table 2.

INSERT TABLE 2 ABOUT HERE

Standardized coefficients for the final model are presented in Figure 1. We can see that all items are loading on their corresponding (theoretical) factors. There are also some cross-loadings. Such is the case with the first item of emotional neglect (There is someone in the child's family who helped him/her feel that he/she was important or special), which in addition loads on physical neglect. Also the fourth item of emotional neglect (People in the child's family feel close to each other), which loads negatively on physical neglect. As well as these there are three items that initially loaded on other factors, but when the second Bayesian near-zero priors was estimated they became non-significant in their cross-loadings (items 1, 2 and 4 from physical neglect). Item 4 from physical abuse (The child confirms having been physically abused) loads simultaneously on three factors: on its theoretical factor, negatively on physical neglect and positively on emotional abuse. Lastly, item 5 from emotional abuse (The child believes he/she was emotionally abused) also loads positively on physical abuse.

INSERT FIGURE 1 ABOUT HERE

Internal consistency

The internal consistency of the adapted CTQ-SF was assessed using the composite reliability index (CRI), obtaining the following results: .938 for emotional negligence, .967 for sexual abuse, .967 for physical abuse, .905 for emotional abuse and .730 for physical neglect. This latter dimension has two out of five negative items, which is what might be causing the underestimation of alpha.

Convergent and discriminant validity

The five factors of the adapted CTQ-SF were correlated with the 12 factors from the ACRAM-PS, as shown in Table 3. We see a general pattern of moderate to high correlations between all dimensions. This can be interpreted as evidence of convergent validity, since there is a significant correlation between all dimensions of both scales which are designed to measure child maltreatment. It can also be seen as evidence of discriminant validity, since although

both instruments are designed to measure the same construct, in theory their dimensions are distinguishable. We see that there is evidence of convergent validity when we carefully look at the correlations of the dimensions of the adapted CTQ-SF with similar content dimensions of the ACRAM-PS. For example, the factor of sexual abuse in both scales correlated .715, which is the highest correlation of the adapted instrument's dimension with any of the 12 factors of the scale of risk. Similar results were found for its physical abuse dimension and its physical neglect dimension, that correlated the highest with the dimension of physical maltreatment in the scale of risk.

INSERT TABLE 3 ABOUT HERE

Gender differences

Mean differences for gender were calculated for all the dimensions in the adapted CTQ-SF. The t-tests showed no statistically significant differences for emotional and physical neglect ($p > .05$), but there were differences for all the dimensions of abuse. The t-test for sexual abuse was statistically significant with a small to moderate effect size ($t(491) = 3.404$, $p = .001$, $d = 0.319$), and girls had a higher mean for sexual abuse ($M = 1.34$) than boys ($M = 1.14$). The effect size was lower for physical abuse ($t(547) = 1.989$, $p = .047$, $d = 0.178$), and again girls had a higher mean ($M = 1.40$) than boys ($M = 1.28$). Finally, there were also differences in emotional abuse ($t(517) = 3.79$, $p < .001$, $d = 0.340$), with girls again having a higher mean ($M = 1.99$) than boys ($M = 1.67$).

Discussion

Although child maltreatment is an everlasting concern (Evans et al., 2014), the dichotomy between self-report and informant-based instruments has made it difficult to estimate the prevalence of neglect and abuse in childhood and adolescence (Stolenborgh et al., 2015). The

aim of the present study was to adapt a well-known self-report **instrument** for its use as an informant-based instrument.

Results from the study provide evidence of the psychometric properties of an adaptation of the CTQ-SF as an informant-based instrument. We analyzed the factorial structure by means of confirmatory factor models. There is abundant evidence regarding the factor structure of the original version of the CTQ-SF, with most validation studies finding a five-factor structure already defended in the seminal work by Bernstein et al. (2003). There are several studies that found good fit of the five-factor model without any subsequent modifications (Forde et al., 2012; Dovran et al., 2013). However, most studies, including the work by Bernstein et al. (2003), made modifications to the original structure, in terms of correlated errors, to achieve a good model fit (Aloba et al., 2020; He et al., 2019; Kongerslev et al., 2019; Spies et al., 2019). In line with previous literature, results in our study showed the five-factor solution to display adequate fit of this adapted version of the CTQ-SF when allowing for near-zero priors for some items.

Previous work on the psychometric properties of the original CTQ-SF used a frequentist approach in which exact zero is set to all cross-loadings of the items with other dimensions in the scale, which may be a strong assumption in scales with several correlated factors (Asparouhov et al., 2015). Our study, however, uses Bayesian CFA models following the approach presented by Muthén and Asparouhov (2012). This approach replaces parameter specifications of exact zeroes for cross-loadings with approximate zeroes based on informative, small variance priors. The factor solution established for the adaptation of the CTQ-SF did not contemplate correlated errors. This may be due to the allowance of some items to present small cross-loadings.

As for reliability, our current results present disparities compared to those found in the literature examining the psychometric properties of the original scale. In our case, we examined

internal consistency of the adaptation of the CTQ-SF as an informant-based instrument and found adequate estimates in all dimensions of the scale. Although Dovran et al. (2013) also reported adequate levels of reliability ($> .70$) in all dimensions, this is not the most frequent result. Most studies have found problems with the reliability of one or more of the dimensions of the scale. Either for physical neglect (Aloba et al., 2020; Bernstein et al., 2003; He et al., 2019; Kongerslev et al., 2019; Spies et al., 2019), emotional abuse (Aloba et al., 2020; He et al., 2019; Spies et al., 2019), emotional neglect (Forde et al., 2012) and/or physical abuse (Aloba et al., 2020). Most studies estimated reliability using Cronbach's alpha, which under certain circumstances does not work well (Raykov & Marcoulides, 2019). This could explain the better behaviour of our estimates (Composite Reliability Indexes). However, Aloba et al. (2020) equivalently used omega estimates and still found poor reliabilities. Therefore, the present approach allowing some items to present small cross-loads has consequently provided estimates of factor loadings that are responsible for better estimates of internal consistency by means of Composite Reliability Indexes (omegas).

We also found support for the convergent validity of the adapted CTQ-SF. There are consistent correlations among the five factors of the CTQ and the 12 dimensions of the ACRAM-PS. The correlations of the 12 dimensions of the ACRAM-PS were negatively correlated with lack of emotional neglect and positively related to the other four factors of the adapted CTQ-SF, as expected. Dimensions in both scales with very similar contents (such as sexual abuse dimensions) correlated higher than with other dimensions that were not so closely related. This provides evidence of convergent and discriminant validity, respectively. These results are in line with most psychometric studies of the original CTQ-SF in which other scales were used to contrast validity (e.g. Aloba et al., 2020; Kongerslev et al., 2019; Schmidt et al., 2020), and also with those that employed external measures such as therapists' ratings (Bernstein et al., 2003). Finally, our results also confirm the gender differences already

found in the literature (Ferragut et al., 2022), with a higher prevalence of sexual and emotional abuse among girls than among boys.

Assessment of child maltreatment remains of high priority given its implications for the well-being of children and adolescents who suffer from it. Having a brief but psychometrically valid instrument of child maltreatment that can be completed by both children/adolescents and professionals within the Child Welfare System is of paramount relevance for analyzing the prevalence of the different types of abuse and neglect. The findings of this study provide evidence of the reliability and validity of the adapted version of the CTQ-SF as an informant-based instrument. Overall, results suggest that psychometric properties are equivalent to those found in previous psychometric studies of the original CTQ-SF. Therefore, both instruments could be used simultaneously to provide estimates of the prevalence of abuse and neglect in childhood and adolescence, and thus deepen the understanding about previous reported differences in prevalence rates.

One limitation of the present study is that the CTQ-SF could not be administered to children/adolescents and informants simultaneously, but only the latter provided responses. Therefore, future studies ought to establish measurement invariance of the self-report and the informant-based versions of the CTQ-SF before examining prevalence rates. Be that as it may, this study represents the first step towards clarifying the disparity on prevalence estimates. Once there is evidence of measurement invariance for the self-report and informant-based versions of the instrument, future research and practice could consider employing a common instrument regardless of the source of report, which would allow to examine the effect of such source of report on the prevalence of maltreatment and potentially reduce measurement error in prevalence rates due to source of report. Having unbiased prevalence rates of the different types of maltreatment is crucial for policy makers and stakeholders in order to develop specifically-oriented interventions for the eradication of child maltreatment. Furthermore,

having a common measurement instrument regardless of the source of report could help promote the coordination of different agencies, such as those from the social services, education and justice systems.

Limitations regarding the applicability of results to other populations or cultures are present. Assessment of child maltreatment by professionals within the **Child Welfare System** depends largely on their conceptualization of child maltreatment and on their professional experience. We contemplated professionals with different amount of years of experience working in the CWS. However, these professionals' practice was developed in the same geographic region from a country of the European Union. Therefore, the institutional framework (*i.e.* guidelines and methods for the assessment of maltreatment) to which they adhered was the same for all of them. As a consequence, a possible dependency between the psychometric properties of the adapted instrument and the assessment procedure cannot be ruled out. Future studies of the psychometric properties of the adapted CTQ-SF in samples of professionals from other institutional frameworks could provide answers to this question.

References

- Aloba, O., Opakunle, T., & Ogunrinu, O. (2020). Childhood Trauma Questionnaire-Short Form (CTQ-SF): dimensionality, validity, reliability and gender invariance among Nigerian adolescents. *Child Abuse & Neglect*, 101, 104357. <https://doi.org/10.1016/j.chiabu.2020.104357>
- Asparouhov, T., Muthén, B., & Morin, A. J. (2015). Bayesian structural equation modeling with cross-loadings and residual covariances: Comments on Stromeier et al. *Journal of Management*, 41(6), 1561-1577. <https://doi.org/10.1177/0149206315591075>
- AUTHORS. (2022).

- Bernstein, D. P., & Fink, L. (1998). *Childhood trauma questionnaire: A retrospective self-report manual*. The Psychological Corporation.
- Bernstein, D. P., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., & Zule, W. (2003). Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Maltreatment & Neglect*, 27(2), 169–190. [https://doi.org/10.1016/S0145-2134\(02\)00541-0](https://doi.org/10.1016/S0145-2134(02)00541-0)
- Centers for Disease Control and Prevention. (1997). *Adverse Childhood Experiences (ACEs)*. U.S. Department of Health & Human Services. https://www.cdc.gov/violenceprevention/aces/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fviolenceprevention%2Facestudy%2Findex.html
- Dovran, A., Winje, D., Øverland, S. N., Breivik, K., Arefjord, K., Dalsbø, A. S., Jentoft M. B., Hansen, A.L. & Waage, L. (2013). Psychometric properties of the Norwegian version of the Childhood Trauma Questionnaire in high-risk groups. *Scandinavian Journal of Psychology*, 54(4), 286-291. <https://doi.org/10.1111/sjop.12052>
- Dudeck, M., Vasic, N., Otte, S., Streb, J., Wingenfeld, K., Grabe, H. J., Freyberger, H. J., Schröder, T., Von Schönfeld, C. E., Driessen, M., Barnow, S., & Spitzer, C. (2015). Factorial validity of the short form of the childhood trauma questionnaire (CTQ—SF) in German psychiatric patients, inmates, and university students. *Psychological Reports*, 116(3), 685-703. <https://doi.org/10.2466/16.03.PR0.116k27w5>
- Dunne, M. P., Zolotor, A. J., Runyan, D. K., Andrevia-Miller, I., Choo, W. Y., Dunne, S. K., Gerbaka, B., Isaeva, O., Jain, D., Kasim, M. S., Macfarlane, B., Mamirova, N., Ramirez, C., Volkova, E., & Youssef, R. (2009). ISPCAN Child Abuse Screening Tools Retrospective version (ICAST-R): Delphi study and field testing in seven countries. *Child Abuse and Neglect*, 33, 815–825. <https://doi.org/10.1016/j.chiabu.2009.09.005>

- Evans, R., Garner, P., & Honig, A. S. (2014). Prevention of violence, maltreatment and neglect in early childhood: A review of the literature on research, policy and practice. *Early Child Development and Care*, 184(9–10), 1295–1335. <https://doi.org/10.1080/03004430.2014.910327>
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood EXperiences (ACE) Study. *American Journal of Preventative Medicine*, 14(4), 245–258. [https://doi.org/10.1016/S0749-3797\(98\)00017-8](https://doi.org/10.1016/S0749-3797(98)00017-8)
- Ferragut, M., Rueda, P., Cerezo, M. V., & Ortiz-Tallo, M. (2022). What do we know about child sexual abuse? Myths and truths in Spain. *Journal of Interpersonal Violence*, 37(1–2), 757–775. <https://doi.org/10.1177/0886260520918579>
- Finkelhor, D., Shattuck, A., Turner, H. A., & Hamby, S. L. (2014). The lifetime prevalence of child sexual abuse and sexual assault assessed in late adolescence. *Journal of Adolescent Health*, 55, 329–333. <http://doi.org/10.1016/j.jadohealth.2013.12.026>
- Forde, D. R., Baron, S. W., Scher, C. D., & Stein, M. B. (2012). Factor structure and reliability of the childhood trauma questionnaire and prevalence estimates of trauma for male and female street youth. *Journal of Interpersonal Violence*, 27(2), 364–379. <https://doi.org/10.1177/0886260511416461>
- Fosse, R., Skjelstad, D. V., Schalinski, I., Thekkumthala, D., Elbert, T., Aanondsen, C. M., Greger, H. K., Jozefiak, T. (2020). Measuring childhood maltreatment: Psychometric properties of the Norwegian version of the Maltreatment and Abuse Chronology of EXposure (MACE) scale. *PLoS One*, 15(2), 1–19. <https://doi.org/10.1371/journal.pone.0229661>

- Georgieva, S., Tomas, J. M., & Navarro-Pérez, J. J. (2021). Systematic review and critical appraisal of Childhood Trauma Questionnaire — Short Form (CTQ-SF). *Child Abuse and Neglect*, 120, 105223. <https://doi.org/10.1016/j.chiabu.2021.105223>
- Hamby, S. L., Finkelhor, D., Ormrod, R., & Turner, H. (2005). *The Juvenile Victimization Questionnaire (JVQ): Administration and Scoring Manual*. Crimes Against Children Research Center
- He, J., Zhong, X., Gao, Y., Xiong, G., & Yao, S. (2019). Psychometric properties of the Chinese version of the Childhood Trauma Questionnaire-Short Form (CTQ-SF) among undergraduates and depressive patients. *Child Abuse & Neglect*, 91, 102-108. <https://doi.org/10.1016/j.chiabu.2019.03.009>
- Hernandez, A., Gallardo-Pujol, D., Pereda, N., Arntz, A., Bernstein, D. P., Gaviria, A-M., Labad, A., Valero, J. & Gutiérrez-Zotes, J.A. (2013). Initial validation of the spanish Childhood Trauma Questionnaire-Short Form: Factor structure, reliability and association with parenting. *Journal of Interpersonal Violence*, 28(7) 1498–1518 <https://doi.org/10.1177/0886260512468240>
- Hsieh, Y. P., Shen, A. C. T., Hwa, H. L., Wei, H. S., Feng, J. Y., & Huang, S. C. Y. (2020). Associations between child maltreatment, dysfunctional family environment, post-traumatic stress disorder and children's bullying perpetration in a national representative sample in Taiwan. *Journal of Family Violence*, 36(1), 27–36. <https://doi.org/10.1007/s10896-020-00144-6>
- Hu, L. T. & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- IBM Corp. (2017). *IBM SPSS Statistics for Windows*. IBM Corp. <https://hadoop.apache.org>

- Kisely, S., Abajobir, A. A., Mills, R., Strathearn, L., Clavarino, A., Gartner, C., & Najman, J. M. (2020). Child maltreatment and persistent smoking from adolescence into adulthood: A birth cohort study. *Nicotine and Tobacco Research*, 22(1), 66–73. <https://doi.org/10.1093/ntr/ntz039>
- Kluwe-Schiavon, B., Viola, T. W., & Grassi-Oliveira, R. (2016). Cross-cultural adaptation of the Maltreatment and Abuse Chronology of EXposure (MACE) scale to Brazilian Portuguese. *Trends in Psychiatry and Psychotherapy*, 38(1), 33–39. <https://doi.org/10.1590/2237-6089-2015-0051>
- Kongerslev, M. T., Bach, B., Rossi, G., Trauelsen, A. M., Ladegaard, N., Løkkegaard, S. S., & Bo, S. (2019). Psychometric validation of the Childhood Trauma Questionnaire-Short Form (CTQ-SF) in a Danish clinical sample. *Child Abuse & Neglect*, 94, 1-10. <https://doi.org/10.1016/j.chiabu.2019.104026>
- Meadows, A. L., Coker, A. L., Bush, H. M., Clear, E. R., Sprang, G., & Brancato, C. J. (2022). Sexual violence perpetration as a risk factor for current depression or posttraumatic symptoms in adolescents. *Journal of Interpersonal Violence*, 37(1-2) 151–171. <https://doi.org/10.1177/0886260520908028>
- Muthén, B. O., & Asparouhov, T. (2012). Bayesian structural equation modeling: A more flexible representation of substantive theory. *Psychological Methods*, 17(3), 313-335. <https://doi.org/10.1037/a0026802>
- Muthén, L. K., & Muthén, B. O. (1998-2017). *Mplus user's guide. Eighth Edition*. Muthén & Muthén.
- Negriff, S., Schneiderman, J. U., & Trickett, P. K. (2017). Concordance Between Self-Reported Childhood Maltreatment Versus Case Record Reviews for Child Welfare–Affiliated Adolescents: Prevalence Rates and Associations with Outcomes. *Child Maltreatment*, 22(1), 34–44. <https://doi.org/10.1177/1077559516674596>

- Norman, R. E., De Byambaa, M. R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical maltreatment, emotional maltreatment, and neglect: A systematic review and meta-analysis. *PLoS Medicine*, 9(11), 1-31. <https://doi.org/10.1371/journal.pmed.1001349>
- Pruessner, M., King, S., Vracotas, N., Abadi, S., Iyer, S., & Malla, A. (2018). Gender differences in childhood trauma in first episode psychosis: Association with symptom severity over two years. *Schizophrenia Research*, 205, 30-37. <https://doi.org/10.1016/j.schres.2018.06.043>
- Raykov, T., & Marcoulides, G.A. (2019). Thanks Coefficient Alpha, We Still Need You!. *Educational and Psychological Measurement*, 79(1), 200-210. <https://doi.org/10.1177/0013164417725127>
- Runyan, D. K., Dunne, M. P., Zolotor, A. J., Madrid, B., Jain, D., Gerbaka, B., Menick, D. M., Andrevia-Miller, I., Kasim, M. S., Choo, W. Y., Isaeva, O., Macfarlane, B., Ramirez, C., Volkova, E., & Youssef, R. M. (2009). The development and piloting of the ISPCAN Child Abuse Screening Tool-Parent version (ICAST-P). *Child Abuse and Neglect*, 33, 826–832. <https://doi.org/10.1016/j.chiabu.2009.09.006>
- Saini, S. M., Hoffmann, C. R., Pantelis, C., Everall, I. P., & Bousman, C. A. (2019). Systematic review and critical appraisal of child maltreatment measurement instruments. *Psychiatry Research*, 272, 106–113. <https://doi.org/10.1016/j.psychres.2018.12.068>
- Schmidt, M. R., Narayan, A. J., Atzl, V. M., Rivera, L. M., & Lieberman, A. F. (2020). Childhood maltreatment on the Adverse Childhood Experiences (ACEs) Scale versus the Childhood Trauma Questionnaire (CTQ) in a perinatal sample. *Journal of Aggression, Maltreatment & Trauma*, 29(1), 38-56. <https://doi.org/10.1080/10926771.2018.1524806>

- Schmitt, T. A., Sass, D. A., Chappelle, W., & Thompson, W. (2018). Selecting the “best” factor structure and moving measurement validation forward: An illustration. *Journal of Personality Assessment*, 100(4), 345-362. <https://doi.org/10.1080/00223891.2018.1449116>
- Spies, G., Kidd, M., & Seedat, S. (2019). A factor analytic study of the Childhood Trauma Questionnaire-Short Form in an all-female South African sample with and without HIV infection. *Child Abuse & Neglect*, 92, 157-166. <https://doi.org/10.1016/j.chiabu.2019.04.002>
- Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R. A., & Ijzendoorn, M. H. (2015). The prevalence of child maltreatment across the globe: Review of a series of meta-analyses. *Child Abuse Review*, 24, 37–50. <http://doi.org/10.1002/car.2353>
- Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the parent-child Conflict Tactics Scales: Development and psychometric data for a national sample of American parents. *Child Abuse and Neglect*, 22, 249–270. [https://doi.org/10.1016/S0145-2134\(97\)00174-9](https://doi.org/10.1016/S0145-2134(97)00174-9)
- Unicef. (1989). *Convention on the Rights of the Child*. United Nations International Children's Emergency Fund.
- World Health Organization. (2016). INSPIRE: Seven strategies for ending violence against children. http://apps.who.int/iris/handle/10665/207717?search-result=true&query=INSPIRE%3A+Seven+strategies+for+ending+violence+against+children.&scope=&rpp=10&sort_by=score&order=desc
- World Health Organization. (2021). *Child maltreatment*. <https://www.who.int/news-room/fact-sheets/detail/child-maltreatment>.
- Yoon, S., Speyer, R., Cordier, R., Aunio, P., & Hakkarainen, A. (2021). A Systematic Review Evaluating Psychometric Properties of Parent or Caregiver Report Instruments on Child

Maltreatment: Part 1: Content Validity. *Trauma, Violence, and Abuse*, 22(5), 1013–1031. <https://doi.org/10.1177/1524838019898456>

Zheng, F., Wu, W., Wang, L., Ngoubene-Atioky, A. J., & Chen, L. (2021). Childhood trauma and suicidal ideation among Chinese female prisoners: The mediating roles of negative emotions and social support. *Personality and Individual Differences*, 168, 1-7. <https://doi.org/10.1016/j.paid.2020.110405>

Zolotor, A. J., Runyan, D. K., Dunne, M. P., Jain, D., Péters, H. R., Ramirez, C., Volkova, E., Deb, S., Lidchi, V., Muhammad, T., & Isaeva, O. (2009). ISPCAN Child Abuse Screening Tool Children's Version (ICAST-C): Instrument development and multinational pilot testing. *Child Abuse and Neglect*, 33, 833–841. <https://doi.org/10.1016/j.chiabu.2009.09.004>

Table 1

*Descriptive statistics of the informant-based version of CTQ-SF items. Note: * inverted item; SD = standard deviation; Min. = minimum; Max. = maximum.*

Item content	Mean	SD	Min.	Max.	Skewness	Kurtosis
<i>Emotional neglect (EN)</i>						
EN1. There is someone in the family who makes him/her feel important or special.*	3.37	1.26	1	5	-0.21	-1.19
EN2. Feels wanted/loved.*	3.42	1.22	1	5	-0.23	-1.15
EN3. Family members take care of each other.*	2.91	1.27	1	5	0.24	-1.13
EN4. People in the family are close to each other.*	2.88	1.30	1	5	0.24	-1.19
EN5. The family is a source of strength and support for the child.*	2.88	1.34	1	5	0.22	-1.21
<i>Sexual abuse (SA)</i>						
SA1. Someone attempted to touch the child/adolescent in a sexual manner or encouraged the him/her to do so.	1.30	0.78	1	5	3.01	9.02
SA2. Someone threatened to hurt or tell lies about the child/adolescent if he/she did not do something sexual with them.	1.12	0.48	1	5	4.58	23.02
SA3. Someone tried to force the child/adolescent to do sexual things or look at sexual things.	1.22	0.70	1	5	3.59	13.09
SA4. Someone molested the child/adolescent.	1.25	0.72	1	5	3.35	11.48
SA5. The child/adolescent claims to have been sexually abused.	1.22	0.69	1	5	3.86	15.76
<i>Physical abuse (PA)</i>						
PA1. A family member hit the child/adolescent so hard that he/she had to be treated by a doctor or go to the hospital.	1.10	0.40	1	5	6.00	45.88
PA2. Someone in the family hit the child/adolescent so hard that bruises or marks were left.	1.28	0.70	1	5	3.10	10.76

PA3. The child/adolescent has been punished with a belt, a board, a rope or some other hard object.	1.19	0.58	1	5	3.74	15.79
PA4. The child/adolescent claims to have been physically abused.	1.52	0.90	1	5	2.06	4.15
PA5. The child/adolescent has been hit/beaten so badly that someone such as a teacher, neighbour, or doctor has noticed/noticed it.	1.16	0.59	1	5	4.71	24.35
<i>Emotional abuse (EA)</i>						
EA1. The child/adolescent has been called things like "stupid", "lazy" or "ugly" in the family context.	2.07	1.13	1	5	0.88	-.01
EA2. The child/adolescent thinks that his/her parents wish he/she had never been born.	1.46	0.91	1	5	2.39	5.59
EA3. Family members have said hurtful or insulting things to the child/adolescent.	2.13	1.12	1	5	0.81	-0.15
EA4. The child/adolescent feels that someone in his/her family hates him/her.	1.76	1.06	1	5	1.49	1.52
EA5. The child/adolescent believes that he/she was emotionally abused.	1.63	1.01	1	5	1.77	2.66
<i>Minimization and denial/Idealization upbringing</i>						
The child/adolescent states that there is nothing he/she wants to change about his/her family.	1.73	1.14	1	5	1.49	1.10
The child/adolescent claims to have the perfect childhood.	1.53	0.99	1	5	2.00	3.14
The child/adolescent claims to have the best family in the world.	1.58	1.05	1	5	1.94	2.83
<i>Physical neglect (PN)</i>						
PN1. The child/adolescent knows that there is someone who cares for him/her and protects him/her.*	3.58	1.21	1	5	-0.35	-1.16
PN2. There is someone to take the child/adolescent to the doctor if he/she needs it.*	3.82	1.26	1	5	-0.69	-0.86
PN3. The child/adolescent does not have enough to eat.	1.62	1.03	1	5	1.85	2.81
PN4. Parents/caregivers use alcohol or drugs in a way that interferes with the family's caregiving.	2.36	1.53	1	5	0.68	-1.09
PN5. Child/adolescent wears dirty clothes.	1.81	1.13	1	5	1.39	1.02

Table 2*Fit indexes and statistics for the models estimated*

Estimation	χ^2 / PPp	df	p	BIC/DIC	CFI/BCFI	RMSEA/BRMSEA [90% CI]
MLR	1017.826	265	<.001	22148.467	.848	.068 [.063 - .072]
Bayesian default priors	1060.554-1212.614	-	< .001	21788.002	.892	.078 [.077 - .080]
Bayesian near-zero priors	625.207-800.533	-	< .001	23924.232	.933	.064 [.061 - .067]
Bayesian with default and near-zero priors	767.314-910.979	-	< .001	24007.485	.917	.065 [.063 - .066]

Table 3*Correlations between CTQ-SF and ACRAM-PS.*

ACRAM-PS subscales	CTQ-SF Lack of emotional neglect	CTQ-SF Sexual abuse	CTQ-SF Physical abuse	CTQ-SF Emotional abuse	CTQ-SF Physical neglect
Parental variables and corruption	-.467*	.162*	.140*	.183*	.533*
Neglect of physical needs	-.382*	.089	.169*	.227*	.564*
Neglect of safety needs	-.421*	.158*	.185*	.339*	.522*
Neglect of educational needs	-.217*	.103*	.042	.186*	.231*
Neglect of mental needs	-.581*	.152*	.249*	.455*	.603*
Physical maltreatment	-.278*	.216*	.504*	.313*	.268*
Emotional maltreatment	-.468*	.197*	.352*	.579*	.422*
Usage and abandonment	-.196*	.094*	.081	.229*	.137*
Sexual abuse	-.283*	.715*	.255*	.317*	.259*
Prenatal maltreatment/risk	-.245*	.083	.050	.039	.386*
Labor exploitation and begging	-.142*	.124*	.071	.137*	.241*
Parental inability to control the child/adolescent's behavior	-.158*	.131*	.159*	.300*	.068

Notes: *= $p < .05$

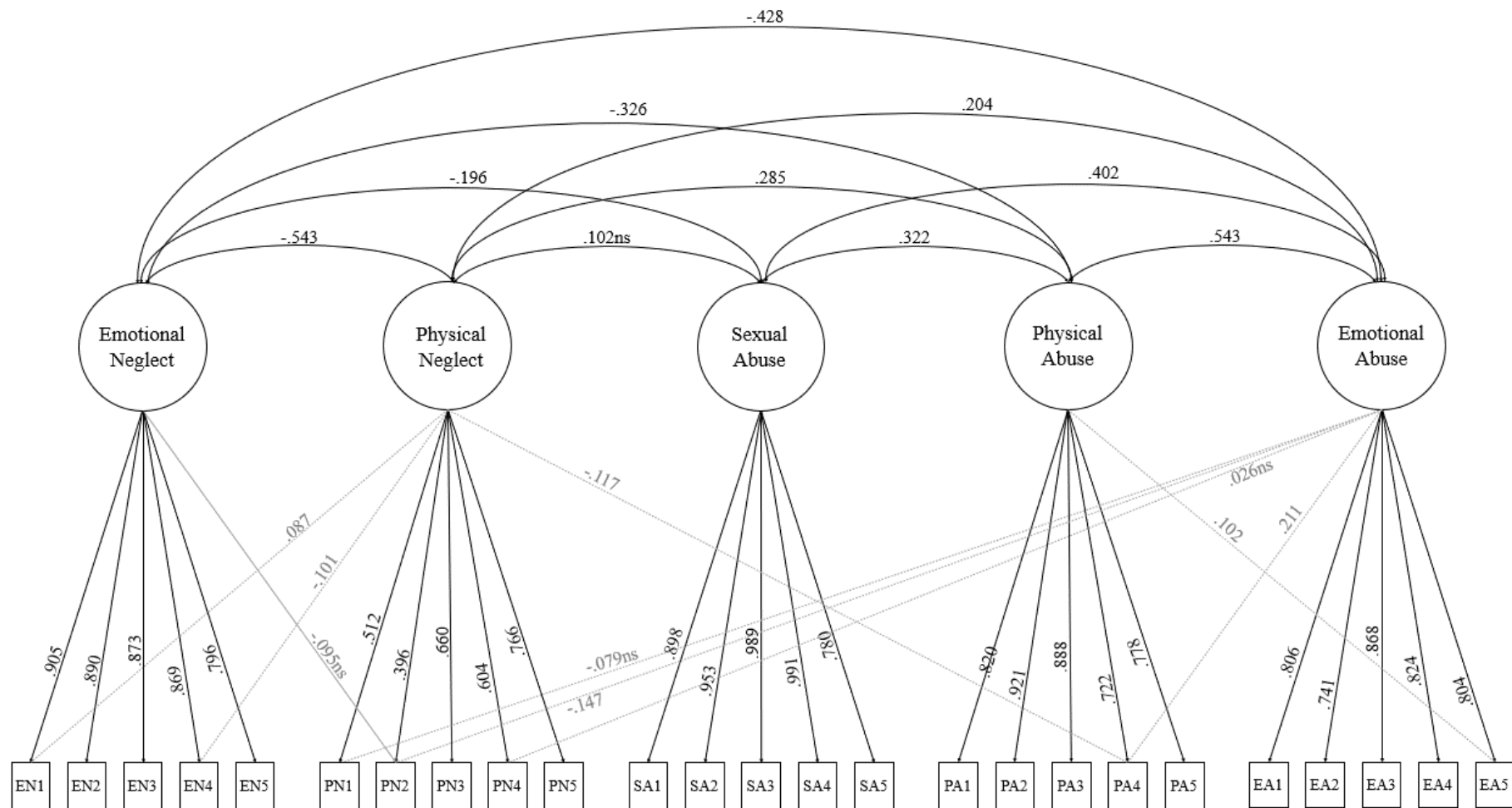


Figure 1

Factorial structure with standardized loadings and correlations of the final model