BMJ Open Systematic review of child maltreatment screening tools used by different occupational groups: a study protocol

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ABSTRACT

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Background Child maltreatment (CM) encompasses physical, emotional or sexual abuse, physical or emotional/ psychological neglect or intimate partner (or domestic) violence and is associated with adverse cognitive, behavioural, physical and social outcomes that often continue shaping adulthood. The early and valid detection of CM is essential to initiate treatment and intervention as well as to avoid continued violence against the child. Various occupational groups, such as healthcare providers, teachers, social workers, psychotherapists and others, encounter maltreated children in their professional settings. Systematic reviews on instruments to assess suspected CM often report on retrospective measurement via caregiver's or child's self-report and are frequently limited to the health system as a setting. The purpose of this Preferred Reporting Items for Systematic Reviews and Meta-Analyses-compliant systematic review is to synthesise the evidence on psychometric properties of instruments to assess suspected CM at the presentation to a broad range of different occupational groups who work with children inside and outside the healthcare system. Method A systematic search will be performed in Scopus, PsycInfo, Medline and Web of Science with no limit on the earliest publication until January 2022. Eligibility criteria include studies that investigate psychometric properties of instruments to assess suspected CM in children and adolescents under 18 years by a professional proxy. After the independent screening of studies by two reviewers, quality assessment and data extraction will be performed using an adaptation of the COnsensus-based Standards for the selection of health Measurement INstruments Risk of Bias checklist, Strengthening the Reporting of Observational Studies in Epidemiology: Explanation and Elaboration report and Downs and Black checklist for measuring study quality. Screening, quality assessment and data extraction will be done using Covidence. The results will be presented in narrative form and, if adequate, a meta-analysis will be performed.

Discussion This review aims to give an overview of the psychometric properties of different instruments designed to screen suspected CM by professional proxies. The results will be of interest to different occupational groups who need information about methodological quality and characteristics of instruments to make decisions about the best-suited tool for a specific purpose. Furthermore, the results of this review will support the development of novel instruments and might improve the existing ones.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ We included instruments in our search strategy that can be used by a broad range of occupational groups from various settings.
- ⇒ The inclusion of studies in four different languages reduces the potential risk of language-related restrictions.
- ⇒ Varying definitions of maltreatment and the diverse instruments used to assess suspected child maltreatment may impede the comparability of results.
- ⇒ The use of a limited number of databases may have resulted in missing relevant studies.

Ethics and dissemination Ethics approval will not be required. The results of this systematic review will be submitted for publication in a peer-reviewed journal. **PROSPERO registration number** CRD42022297997.

BACKGROUND

The WHO defines child maltreatment (CM) as all forms of abuse (physical, sexual and emotional), neglect (physical or emotional) and child sexual exploitation that result in potential or actual harm to a child's physical or psychological health, development ĝ or survival.¹ An increasingly recognised sixth form of exposure is intimate partner violence (or domestic violence) during (n) childhood, such as when a child witnesses a parent or family member experiencing assaults.² Around a quarter of all children will face abuse or neglect at some stage in their lives.^{1 3} Additionally, two-thirds of children experience violent disciplinary practices from their caregivers and almost 75% of children between the ages of 2 and 4 are regularly subjected to physical punishment or psychological violence by those entrusted with their care.⁴ Recent studies and reviews show that CM has detrimental emotional, cognitive, behavioural, physical and social outcomes that often continue until adulthood.⁵⁻⁷ CM does not necessarily become apparent through consistent symptoms and

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signs; however, existing guidelines⁸ have undertaken extensive reviews on symptoms and signs and can guide practitioners. Symptoms might range from bruises to fractures and behavioural problems such as aggression and substance abuse.^{9 10} Maltreatment often requires diagnostic input and treatment from multiple physicians and the process of identification is burdened by unavailable or inconclusive medical history, thus remains difficult and may suffer from misleading judgements.¹¹ Nevertheless, early and valid detection of CM is essential to initiate treatment and intervention as well as to avoid ongoing maltreatment.¹² Various occupational groups, such as healthcare providers, teachers, social workers, psychotherapists, psychological expert witnesses and others, encounter maltreated children in their professional settings. However, existing instruments to assess suspected CM rely on the results of medical examinations, analysis of medical records or the child's or caregivers' self-report.^{13–15} Despite their potential role in detecting maltreatment, healthcare providers and other occupational groups in their settings often lack knowledge or confidence in screening for and detecting potential child abuse.¹⁶ Using valid screening tools or instruments to assess suspected CM could increase knowledge and confidence in child physical abuse recognition^{17 18} and improve reporting rates.¹⁹

Objectives/rationale

Systematic reviews on the psychometric properties of instruments to assess suspected CM exist.^{13–15 20–22} Most of them focus on caregiver and child self-report instruments.^{14 20 21} These instruments have shortcomings, such as not being appropriate for infants and being influenced by recall bias and social desirability, which makes them primarily used in research but not everyday care practice. To our knowledge, only a few systematic reviews report on instruments that can be completed by healthcare professionals.^{13 15 22} Evidence on instruments that can be used by occupational groups other than health professionals (eg, social workers, psychotherapists, psychological expert witnesses or professionals in child protection systems) working with potentially maltreated children in multiple settings (eg, youth services, out-of-hours primary care locations, and family counselling services) is lacking hitherto. However, to enable improved detection of CM at scale, instruments for broader occupational groups and settings are essential. In addition, previous reviews that report on self-report instruments focused on studies published in English or Chinese,^{13 15 22} whereas those on healthcare professionals only included English language publications.^{14 20 21}

Therefore, the objective of the planned review is to assess and compare psychometric properties and study quality for existing instruments to identify suspected CM, which can be used by different occupational groups working with children in multiple settings, as searched for in four languages.

The review questions will be given as follows.

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intentional force against a child resulting in harm to the child's health, development or survival. Sexual abuse involves a child in sexual activity that she or he does not fully comprehend. Emotional abuse involves the failure of a caregiver to provide a supportive and developmentally appropriate environment. Neglect is defined as the failure to provide for the child in one or more of the following areas: health, education, emotional development, nutrition, shelter and safe living conditions. An abuse must have been committed by an adult. A child is exposed to domestic violence when the child observes a parent or family member experiencing assaults, threats or property damage inflicted by another adult or teenager who typically resides in the home.²⁶

Outcome

The study should report on testing at least one psychometric property listed by the COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN) checklist²⁷ of instruments designed to assess suspected CM for use by different occupational groups that encounter potentially maltreated children. The outcomes that are extracted and evaluated criteria for this review include content validity, structural validity, internal consistency, measurement invariance, reliability, measurement error, criterion validity, hypothesis testing and information in diagnostic tests such as sensitivity, specificity and predictive values. All these outcomes were defined in the COSMIN checklist, including their potential operationalisation (eg, Crohnbach's alpha, receiver operating characteristic curve, Cohen's kappa and t-test).

Inclusion criteria

Studies will be included if they were original empirical studies published or in press or conference proceedings that report on psychometric properties of instruments to assess suspected CM. The instruments, which will be included in this systematic review, are required to meet the following inclusion criteria: (a) have as their main objective the evaluation of at least one psychometric property; (b) be applicable to children less than 18 years old and (c) be designed for use by occupational groups such as social workers, psychotherapists, psychological expert witnesses or professionals in child protection systems.

Language of publication

Studies conducted in any country and reported in English, German, French or Spanish are included based on the language capabilities of the review team.

Exclusion criteria

Studies on individuals older than 18 years, single case studies, case series and studies on the prevention of CM or on risk factors for maltreatment will be excluded. Book chapters, letters, commentaries, reviews, meta-analyses, editorials, discussion papers and dissertations will be excluded. Studies that focus on maltreatment carried out by individuals younger than 18 years old or childhood experiences that can be considered adversities or trauma

rather than maltreatment will not be included. Self-report instruments, reports through caregivers and retrospective assessment of CM in adulthood will also not be included.

Data management

Studies will be exported from the respective databases to Endnote X9 in order to import them to Covidence.²⁸ Covidence will be used to remove duplicates, screen titles and abstracts, execute risk of bias assessment and data extraction and to calculate inter-rater agreement between reviewers.

Selection process

ŝ Two reviewers will independently screen titles and 8 abstracts based on the inclusion and exclusion criteria. Studies will be rated as *maybe* when title or abstract does not provide enough information to determine inclusion or exclusion. The full text will then be screened. Articles that clearly do not meet the inclusion criteria based on title, abstract or full text will be excluded. Inconsistencies between the two reviewers will be resolved through discussion or consultation with a third reviewer (BG or LK). After piloting the selection criteria, the inter-rater agreement will be calculated for 20% of the articles. If **ge** the agreement is high enough (ie, Cohen's kappa>0.6), the remaining articles will be screened by either DC or **g** JS. If the agreement is not high enough, the reviewers will go through their conflicts and discuss the selection $\overline{\mathbf{s}}$ criteria before continuing to screen. More articles will e be screened by both reviewers until the inter-rater agreement is satisfactory. Reference lists of included papers and reviews on similar topics will be searched by DC, BG and LK to identify any additional relevant papers. In the đ second stage, reviewers will independently screen full texts (DC and JS) to determine if studies can be included or excluded for quality assessment and data extraction ≥ based on the defined criteria. The inter-rater agreement training, and will again be calculated. The reasons for excluded studies will be documented.

Data extraction

A template based on Strengthening the Reporting of Observational Studies in Epidemiology: Explanation and Elaboration report²⁹ and the COSMIN Risk of Bias checklist²⁷ will be modified for the purpose of this review and used to extract relevant data from included studies. The template will be piloted using 20% of eligible articles. Based on the pilot, adjustments to the template a will be made when deemed necessary. The pilot will be 3 done independently by three reviewers (DC, JS and LR). After pilot testing and relevant adjustments, reviewers will independently extract data and the other will check the accuracy of the extracted data. Discrepancies will be discussed. If no consensus can be reached, another reviewer will decide (BG or LK). The preliminary data extraction template covers the following topics: type of record, title, authors, publication year/year of study, country, aim of study, study design, sample source,

method of recruitment, sample size, individual characteristics such as age, gender, socioeconomic status and ethnicity, study setting, type of maltreatment measured, number of subscales, number of items, time to complete the instrument, handling of missing items, target population (age, nationality and gender), purpose of use, range of scores, response options, occupational group to use the instrument, psychometric properties and whether the instrument is available in German and has been validated for Germany, method of data analysis and statistical outcomes. If any new categories are identified during the course of the review, they will be added, and the extraction database will be modified as needed. Studies with insufficient data will be excluded if contacting the corresponding authors by email will not contribute to clarification.

Quality assessment

The quality of the individual studies will be assessed using relevant items from the COSMIN checklist^{27 30} and Downs and Black³¹ checklist for measuring study quality. The items will be adapted for this review and will include the following: clear aim/hypothesis; clear description of outcomes, maltreatment, population and procedure; recruitment bias; statistical methods used; missing data; study design and measurement of psychometric properties according to the COSMIN Risk of Bias checklist. Incongruent ratings will be solved through discussion, if necessary, including a third reviewer. Whenever articles lack relevant information, we will email the corresponding authors. A narrative summary of the quality of each study will be provided. The quality assessment will be done by PR and LR. The overall rating for each study will not be determined by taking the lowest rating of the assessed psychometric property as recommended in the COSMIN manual³⁰ since subtle differences in quality cannot be differentiated. A revised scoring system expressed as a percentage will be applied as suggested by others^{32 33}: poor (0–25%), fair (25–50%), good (50–75%) and excellent (75-100%).

Data analysis and synthesis

A qualitative synthesis of findings will be performed. All included studies will be presented in a table providing information on type of record, authors, country, sample size, gender, age, form of maltreatment, measurement of maltreatment, respondent type (occupational group) and study design. A second table will provide information on the rated quality of the included studies such as clear study aim, measurement of psychometric properties, content validity, internal consistency or report of results. A third table will present information on the identified instruments, the number of studies that contain information on psychometric criteria and information on the psychometric properties of the instruments and whether it is available in the German language and has been validated for the German population. A narrative synthesis of the findings from the included studies will be presented,

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and data mining,

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which will be structured by the type of instrument and the responding occupational group. Summaries of psychometric properties and the quality of the included studies will also be provided in the text.

A meta-analysis will be performed if there are enough studies with information on psychometric properties and depending on the heterogeneity of types of maltreatment and psychometric properties assessed in the different studies.³⁴ Results will be analysed using forest plots. Results from different study designs will not be pooled together (eg, studies that assessed different types of maltreatment and studies that assessed different types of matteautient and studies that assessed different types of psychometric criteria) to prevent a misleading summary of the study effect. We, therefore, plan to analyse data separately. Statistical heterogeneity will be assessed by calculating \mathbf{g} I² or Cochran's Q test.³⁵ Publication bias will be assessed I^2 or Cochran's Q test.³⁵ Publication bias will be assessed using a funnel plot for each outcome by plotting the standardised psychometric indicator against study size. To statistically test for publication bias, we plan to use the Egger regression test³⁶ and the trim and fill method³⁷ to luding assess the significance of potential publication bias as well as to adjust for it.³⁸ for uses rela

Patient and public involvement

Neither patients nor children, adolescents or parents could be involved because of the risk of traumatisation or retraumatisation. Instead, our research team sought advice from different professionals with expertise in CM for developing the research question and study protocol for this review. Therefore, we were able to gather expertise from members of the local child protection group, medical doctors and management of the children's hospital besides our own experience in different fields.

DISCUSSION

≥ Prior research^{17 39} has highlighted the importance of valid trainin measurement of suspected CM to improve early detection. The studies that will be summarised in this review might indicate that multiple occupational groups such as healthcare providers, teachers, social workers, psychotherapists and psychological experts in various settings (eg, youth services, out-of-hours primary care locations, family counselling services, etc) may encounter CM and have a need for validated instruments.

Systematic reviews hitherto have investigated psychometric properties of instruments designed to assess different forms of CM, however focusing on caregiver or child's self-report,²⁰ the potential use of results of **8** medical examinations and medical records¹³ ¹⁵ ²² or retrospective measurements of suspected CM and instruments primarily used in the research.^{13–15} To the best of our knowledge, this is the first systematic review that will explore psychometric properties of instruments to assess suspected CM that can be used by different occupational groups in different settings of routine practice.

Through the review, the comparison of the studies and the thorough data extraction process, we will provide insights into the quality of the reporting of existing studies as well as the range in validity. In addition, by giving an oversight over items from reliable and valid existing instruments, this review may inform professionals who work with children in and outside the healthcare system and support the use of instruments in practice; if needed, the development of novel instruments might be inspired. This, in turn, might increase future intervention possibilities across multiple settings. The findings of this review might also lead to the validation and cultural adaptation of instruments in German-speaking countries and, thus, increase their availability for the German child protection system.

Strengths and limitations

The varying definitions of maltreatment and types of instruments used to assess suspected CM might make results difficult to compare, despite of the consistent definition that we used throughout our project.²⁵ A strength of our review is that we will be able to increase the number of languages searched into four (English, German, Spanish and French). However, due to resource issues, we will only search for articles in four databases, potentially missing out on studies published in databases not covered by this review.

CONCLUSIONS

By its broad approach, this review will present the international evidence on the validity and psychometric results of existing screening tools to assess suspected CM across various occupational groups and in multiple settings. By evaluating and comparing the psychometric properties and study quality, this review will increase the utilisation of existing tools and inspire the development of new tools, with the effect to increase the overall validity and reliability of instruments in the field. By additionally inquiring the availability and validation of these instruments in German-speaking countries, we may ease the utilisation of existing tools in German contexts.

Contributors DC, JS, BG and EM conceived the idea; DC planned and designed the study protocol, FDB revised it and gave advice on methods and extraction plans; DC and JS will perform the screening; DC, BG and LK will search eligible papers for additional articles; PR and LR will conduct the quality assessment; DC, JS and LR will conduct the data extraction; DC performed the initial writing up; all authors contributed to the manuscript and agreed on methods for the study selection, extraction, synthesis and the final written manuscript of the protocol; all authors have read and approved the final manuscript. FDB will be the guarantor of the review.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, conduct, reporting or dissemination plans of this research.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

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PRISMA 2020 Checklist

Section and Topic	ltem #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	See Checklist for Abstracts
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	71-114
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	115-12
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	177-196
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	136-137
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	-
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	197-239
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	167-176
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	228-239
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	240-254
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	-
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	-
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	-
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	264-267
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	268-277
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	274
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	-
Reporting bias	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	-

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PRISMA 2020 Checklist

Section and Topic	ltem #	Checklist item	Location where item is reported			
assessment						
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	-			
RESULTS						
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	131-132			
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.				
Study characteristics	17	Cite each included study and present its characteristics.	-			
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	-			
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	-			
Results of	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	-			
syntheses	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	-			
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	-			
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	-			
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.				
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	-			
DISCUSSION						
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	279-291			
	23b	Discuss any limitations of the evidence included in the review.	279-291			
	23c	Discuss any limitations of the review processes used.	279-291			
	23d	Discuss implications of the results for practice, policy, and future research.	291-296			
OTHER INFORMA	1					
Registration and	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	132-134			
protocol	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	-			
	24c Describe and explain any amendments to information provided at registration or in the protocol.		- 335-337			
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.				
Competing interests	26	Declare any competing interests of review authors.	333-334			
Availability of data, code and other materials	a, code and studies; data used for all analyses; analytic code; any other materials used in the review.		-			





PRISMA 2020 Checklist

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

RIS MU

PRISMA 2020 for Abstracts Checklist

Section and Topic	ltem #	Checklist item	Reported (Yes/No)
TITLE	-		
Title	1	Identify the report as a systematic review.	Yes
BACKGROUND			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	Yes
METHODS	-		
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	Yes
Information sources	4	Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched.	Yes
Risk of bias	5	Specify the methods used to assess risk of bias in the included studies.	Yes
Synthesis of results	6	Specify the methods used to present and synthesise results.	Yes
RESULTS	•		
Included studies	7	Give the total number of included studies and participants and summarise relevant characteristics of studies.	No (Protocoll)
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing groups, indicate the direction of the effect (i.e. which group is favoured).	No (Protocoll)
DISCUSSION	•		
Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision).	Yes
Interpretation	10	Provide a general interpretation of the results and important implications.	No
			(Protocoll)
OTHER			
Funding	11	Specify the primary source of funding for the review.	Yes
Registration	12	Provide the register name and registration number.	Yes

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Search Strategy

Database Host: Ovid

Database: PsycINFO

Date: 2.2.2022

Results: 2676

Concept 1	Concept 2	Concept 3	Concept 4	Concept 5
Population	Maltreatment	Psychometric	Measurement	Entire Search Term
		Properties		
child* OR infan* OR	abus* OR	valid* OR	instrument* OR	((((child* or infan* or adolescen* or teen* or youth* or pediatr* or
adolescen* OR teen* OR	maltreat* OR	reliab* OR	scor* OR	paediatr* or young* or baby or babies or toddler* or minor* or girl*
youth* OR pediatr* OR	"ill-treatm*" OR	psychometric*	screen* OR	or boy*) adj4 (abus* or maltreat* or "ill-treatm*" or "ill treatm*" or
paediatr* OR young* OR	"ill treatm*" OR	OR accura* OR	scal* OR	neglect* or "exposure to intimate partner violence" or "exposure to
baby OR babies OR toddler*	neglect* OR	"sensitivity" OR	question* OR	domestic violence" or mistreat* or assault* or molest* or "forced
OR minor* OR girl* OR	"exposure to	"specificity" OR	report* OR	sex" or "coerced sex" or "unwanted sex" or "forced intercourse" or
boy*	intimate partner	"ROC" OR	measur* OR	"unwanted intercourse" or "forced penetration" or "unwanted
	violence" OR	"AUC"	inventor* OR	penetration" or rape or "sexual violence" or "unwanted touching" or
	"exposure to		interview* OR	"forced touching" or "sexual harrassment" or "physical harm" or
	domestic		survey* OR	"corporal punishment" or "physical punishment")) and (instrument*
	violence" OR		test* OR	or scor* or screen* or scal* or question* or report* or measur* or
	mistreat* OR		construct* OR	inventor* or interview* or survey* or test* or construct* or evaluat*
	assault* OR		evaluat* OR	or analys* or assess*) and (valid* or reliab* or psychometric* or
	molest* OR		analys* OR	accura* or "sensitivity" or "specificity" or "ROC" or "AUC")) not
	"forced sex" OR		assess*	("substance abuse" or "substance misuse" or "alcohol abuse" or
	"coerced sex" OR			"alcohol misuse" or "drug abuse" or "drug misuse")).ti. or ((((child* or
	"unwanted sex"			infan* or adolescen* or teen* or youth* or pediatr* or paediatr* or
	OR "forced			young* or baby or babies or toddler* or minor* or girl* or boy*) adj4

intercourse" OR	(abus* or maltreat* or "ill-treatm*" or "ill treatm*" or neglect* or
"unwanted	"exposure to intimate partner violence" or "exposure to domestic
intercourse" OR	violence" or mistreat* or assault* or molest* or "forced sex" or
"forced	"coerced sex" or "unwanted sex" or "forced intercourse" or
penetration" OR	"unwanted intercourse" or "forced penetration" or "unwanted
"unwanted	penetration" or rape or "sexual violence" or "unwanted touching" or
penetration" OR	"forced touching" or "sexual harrassment" or "physical harm" or
rape OR "sexual	"corporal punishment" or "physical punishment")) and (instrument*
violence" OR	or scor* or screen* or scal* or question* or report* or measur* or
"unwanted	inventor* or interview* or survey* or test* or construct* or evaluat*
touching" OR	or analys* or assess*) and (valid* or reliab* or psychometric* or
"forced touching"	accura* or "sensitivity" or "specificity" or "ROC" or "AUC")) not
OR "sexual	("substance abuse" or "substance misuse" or "alcohol abuse" or
harrassment" OR	alcohol misuse" or "drug abuse" or "drug misuse")).ab. or ((((child*
"physical harm"	or infan* or adolescen* or teen* or youth* or pediatr* or paediatr*
OR "corporal	or young* or baby or babies or toddler* or minor* or girl* or boy*)
punishment" OR	adj4 (abus* or maltreat* or "ill-treatm*" or "ill treatm*" or neglect*
"physical	or "exposure to intimate partner violence" or "exposure to domestic
punishment"	violence" or mistreat* or assault* or molest* or "forced sex" or
	"coerced sex" or "unwanted sex" or "forced intercourse" or
	"unwanted intercourse" or "forced penetration" or "unwanted
	penetration" or rape or "sexual violence" or "unwanted touching" or
	"forced touching" or "sexual harrassment" or "physical harm" or
	"corporal punishment" or "physical punishment")) and (instrument*
	or scor* or screen* or scal* or question* or report* or measur* or
	inventor* or interview* or survey* or test* or construct* or evaluat*
	or analys* or assess*) and (valid* or reliab* or psychometric* or
	accura* or "sensitivity" or "specificity" or "ROC" or "AUC")) not
	("substance abuse" or "substance misuse" or "alcohol abuse" or
	"alcohol misuse" or "drug abuse" or "drug misuse")).id.

Database Host: Ovid

Database: Medline

Date: 2.2.2022

Results: 2661

Concept 1	Concept 2	Concept 3	Concept 4	Concept 5
Population	Maltreatment	Psychometric	Measurement	Entire Search Term
		Properties		
child* OR infan* OR	abus* OR	valid* OR	instrument* OR	((((child* or infan* or adolescen* or teen* or youth* or pediatr* or
adolescen* OR teen* OR	maltreat* OR	reliab* OR	scor* OR	paediatr* or young* or baby or babies or toddler* or minor* or girl*
youth* OR pediatr* OR	"ill-treatm*" OR	psychometric*	screen* OR	or boy*) adj4 (abus* or maltreat* or "ill-treatm*" or "ill treatm*" or
paediatr* OR young* OR	"ill treatm*" OR	OR accura* OR	scal* OR	neglect* or "exposure to intimate partner violence" or "exposure to
baby OR babies OR toddler*	neglect* OR	"sensitivity" OR	question* OR	domestic violence" or mistreat* or assault* or molest* or "forced
OR minor* OR girl* OR	"exposure to	"specificity" OR	report* OR	sex" or "coerced sex" or "unwanted sex" or "forced intercourse" or
boy*	intimate partner	"ROC" OR	measur* OR	"unwanted intercourse" or "forced penetration" or "unwanted
	violence" OR	"AUC"	inventor* OR	penetration" or rape or "sexual violence" or "unwanted touching" or
	"exposure to		interview* OR	"forced touching" or "sexual harrassment" or "physical harm" or
	domestic		survey* OR	"corporal punishment" or "physical punishment")) and (instrument*
	violence" OR		test* OR	or scor* or screen* or scal* or question* or report* or measur* or
	mistreat* OR		construct* OR	inventor* or interview* or survey* or test* or construct* or evaluat*
	assault* OR		evaluat* OR	or analys* or assess*) and (valid* or reliab* or psychometric* or
	molest* OR		analys* OR	accura* or "sensitivity" or "specificity" or "ROC" or "AUC")) not
	"forced sex" OR		assess*	("substance abuse" or "substance misuse" or "alcohol abuse" or
	"coerced sex" OR			"alcohol misuse" or "drug abuse" or "drug misuse")).ti. or ((((child* or
	"unwanted sex"			infan* or adolescen* or teen* or youth* or pediatr* or paediatr* or
	OR "forced			young* or baby or babies or toddler* or minor* or girl* or boy*) adj4
	intercourse" OR			(abus* or maltreat* or "ill-treatm*" or "ill treatm*" or neglect* or
	"unwanted			"exposure to intimate partner violence" or "exposure to domestic

intercourse" OR	violence" or mistreat* or assault* or molest* or "forced sex" or
"forced	"coerced sex" or "unwanted sex" or "forced intercourse" or
penetration" OR	"unwanted intercourse" or "forced penetration" or "unwanted
"unwanted	penetration" or rape or "sexual violence" or "unwanted touching" or
penetration" OR	"forced touching" or "sexual harrassment" or "physical harm" or
rape OR "sexual	"corporal punishment" or "physical punishment")) and (instrument*
violence" OR	or scor* or screen* or scal* or question* or report* or measur* or
"unwanted	inventor* or interview* or survey* or test* or construct* or evaluat*
touching" OR	or analys* or assess*) and (valid* or reliab* or psychometric* or
"forced touching"	accura* or "sensitivity" or "specificity" or "ROC" or "AUC")) not
OR "sexual	("substance abuse" or "substance misuse" or "alcohol abuse" or
harrassment" OR	"alcohol misuse" or "drug abuse" or "drug misuse")).ab. or ((((child*
"physical harm"	or infan* or adolescen* or teen* or youth* or pediatr* or paediatr*
OR "corporal	or young* or baby or babies or toddler* or minor* or girl* or boy*)
punishment" OR	adj4 (abus* or maltreat* or "ill-treatm*" or "ill treatm*" or neglect*
"physical	or "exposure to intimate partner violence" or "exposure to domestic
punishment"	violence" or mistreat* or assault* or molest* or "forced sex" or
	"coerced sex" or "unwanted sex" or "forced intercourse" or
	"unwanted intercourse" or "forced penetration" or "unwanted
	penetration" or rape or "sexual violence" or "unwanted touching" or
	"forced touching" or "sexual harrassment" or "physical harm" or
	"corporal punishment" or "physical punishment")) and (instrument*
	or scor* or screen* or scal* or question* or report* or measur* or
	inventor* or interview* or survey* or test* or construct* or evaluat*
	or analys* or assess*) and (valid* or reliab* or psychometric* or
	accura* or "sensitivity" or "specificity" or "ROC" or "AUC")) not
	("substance abuse" or "substance misuse" or "alcohol abuse" or
	"alcohol misuse" or "drug abuse" or "drug misuse")).kw.

Database: Scopus

Date: 2.2.2022

Results: 5523

Concept 1	Concept 2	Concept 3	Concept 4	Concept 5
Population	Maltreatment	Psychometric	Measurement	Entire Search Term
		Properties		
child* OR infan* OR	abus* OR	valid* OR	instrument* OR	TITLE-ABS-KEY (((child* OR infan* OR adolescen* OR teen* OR
adolescen* OR teen* OR	maltreat* OR	reliab* OR	scor* OR	youth* OR pediatr* OR paediatr* OR young* OR baby OR babies
youth* OR pediatr* OR	"ill-treatm*" OR	psychometric*	screen* OR	OR toddler* OR minor* OR girl* OR boy*) W/4 (abus* OR
paediatr* OR young* OR	"ill treatm*" OR	OR accura* OR	scal* OR	maltreat* OR "ill-treatm*" OR "ill treatm*" OR neglect* OR
baby OR babies OR toddler*	neglect* OR	"sensitivity" OR	question* OR	"exposure to intimate partner violence" OR "exposure to domestic
OR minor* OR girl* OR	"exposure to	"specificity" OR	report* OR	violence" OR mistreat* OR assault* OR molest* OR "forced sex"
boy*	intimate partner	"ROC" OR	measur* OR	OR "coerced sex" OR "unwanted sex" OR "forced intercourse" OR
	violence" OR	"AUC"	inventor* OR	"unwanted intercourse" OR "forced penetration" OR "unwanted
	"exposure to		interview* OR	penetration" OR rape OR "sexual violence" OR "unwanted
	domestic		survey* OR	touching" OR "forced touching" OR "sexual harrassment" OR
	violence" OR		test* OR	"physical harm" OR "corporal punishment" OR "physical
	mistreat* OR		construct* OR	punishment")) AND (instrument* OR scor* OR screen* OR scal*
	assault* OR		evaluat* OR	OR question* OR report* OR measur* OR inventor* OR
	molest* OR		analys* OR	interview* OR survey* OR test* OR construct* OR evaluat* OR
	"forced sex" OR		assess*	analys* OR assess*) AND (valid* OR reliab* OR psychometric*
	"coerced sex" OR			OR accura* OR "sensitivity" OR "specificity" OR "ROC" OR "AUC"
	"unwanted sex") AND NOT ("substance abuse" OR "substance misuse" OR
	OR "forced			"alcohol abuse" OR "alcohol misuse" OR "drug abuse" OR "drug
	intercourse" OR			misuse")) AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (
	"unwanted			LANGUAGE, "German") OR LIMIT-TO (LANGUAGE, "French") OR
	intercourse" OR			LIMIT-TO (LANGUAGE , "Spanish")) AND (LIMIT-TO (DOCTYPE ,
	"forced			"ar") OR LIMIT-TO (DOCTYPE , "cp"))

	1	r		
penetration" O				
"unwanted				
penetration" OI				
rape OR "sexua				
violence" OR				
"unwanted				
touching" OR				
"forced touching				
OR "sexual				
harrassment" C	R			
"physical harm"				
OR "corporal				
punishment" O	2			
"physical				
punishment"				

Database: Web of Science

Date: 2.2.2022

Results: 2939

Concept 1	Concept 2	Concept 3	Concept 4	Concept 5
Population	Maltreatment	Psychometric	Measurement	Entire Search Term
		Properties		
child* OR infan* OR	abus* OR	valid* OR	instrument* OR	((TI=(((child* OR infan* OR adolescen* OR teen* OR youth* OR
adolescen* OR teen* OR	maltreat* OR	reliab* OR	scor* OR	pediatr* OR paediatr* OR young* OR baby OR babies OR toddler* OR
youth* OR pediatr* OR	"ill-treatm*" OR	psychometric*	screen* OR	minor* OR girl* OR boy*) NEAR/4 (abus* OR maltreat* OR "ill-
paediatr* OR young* OR	"ill treatm*" OR	OR accura* OR	scal* OR	treatm*" OR "ill treatm*" OR neglect* OR "exposure to intimate
baby OR babies OR toddler*	neglect* OR	"sensitivity" OR	question* OR	partner violence" OR "exposure to domestic violence" OR mistreat*
OR minor* OR girl* OR	"exposure to	"specificity" OR	report* OR	OR assault* OR molest* OR "forced sex" OR "coerced sex" OR
boy*	intimate partner	"ROC" OR	measur* OR	"unwanted sex" OR "forced intercourse" OR "unwanted intercourse"
	violence" OR	"AUC"	inventor* OR	OR "forced penetration" OR "unwanted penetration" OR rape OR
	"exposure to		interview* OR	"sexual violence" OR "unwanted touching" OR "forced touching" OR
	domestic		survey* OR	"sexual harrassment" OR "physical harm" OR "corporal punishment"
	violence" OR		test* OR	OR "physical punishment")) AND (instrument* OR scor* OR screen*
	mistreat* OR		construct* OR	OR scal* OR question* OR report* OR measur* OR inventor* OR
	assault* OR		evaluat* OR	interview* OR survey* OR test* OR construct* OR evaluat* OR
	molest* OR		analys* OR	analys* OR assess*) AND (valid* OR reliab* OR psychometric* OR
	"forced sex" OR		assess*	accura* OR "sensitivity" OR "specificity" OR "ROC" OR "AUC") NOT
	"coerced sex" OR			("substance abuse" OR "substance misuse" OR "alcohol abuse" OR
	"unwanted sex"			"alcohol misuse" OR "drug abuse" OR "drug misuse"))) OR
	OR "forced			AB=(((child* OR infan* OR adolescen* OR teen* OR youth* OR
	intercourse" OR			pediatr* OR paediatr* OR young* OR baby OR babies OR toddler* OR
	"unwanted			minor* OR girl* OR boy*) NEAR/4 (abus* OR maltreat* OR "ill-
	intercourse" OR			treatm*" OR "ill treatm*" OR neglect* OR "exposure to intimate
	"forced			partner violence" OR "exposure to domestic violence" OR mistreat*

penetration" OR	OR assault* OR molest* OR "forced sex" OR "coerced sex" OR
"unwanted	"unwanted sex" OR "forced intercourse" OR "unwanted intercourse"
penetration" OR	OR "forced penetration" OR "unwanted penetration" OR rape OR
rape OR "sexual	"sexual violence" OR "unwanted touching" OR "forced touching" OR
violence" OR	"sexual harrassment" OR "physical harm" OR "corporal punishment"
"unwanted	OR "physical punishment")) AND (instrument* OR scor* OR screen*
touching" OR	OR scal* OR question* OR report* OR measur* OR inventor* OR
"forced touching"	interview* OR survey* OR test* OR construct* OR evaluat* OR
OR "sexual	analys* OR assess*) AND (valid* OR reliab* OR psychometric* OR
harrassment" OR	accura* OR "sensitivity" OR "specificity" OR "ROC" OR "AUC") NOT
"physical harm"	("substance abuse" OR "substance misuse" OR "alcohol abuse" OR
OR "corporal	"alcohol misuse" OR "drug abuse" OR "drug misuse"))) OR
punishment" OR	AK=(((child* OR infan* OR adolescen* OR teen* OR youth* OR
"physical	pediatr* OR paediatr* OR young* OR baby OR babies OR toddler* OR
punishment"	minor* OR girl* OR boy*) NEAR/4 (abus* OR maltreat* OR "ill-
	treatm*" OR "ill treatm*" OR neglect* OR "exposure to intimate
	partner violence" OR "exposure to domestic violence" OR mistreat*
	OR assault* OR molest* OR "forced sex" OR "coerced sex" OR
	"unwanted sex" OR "forced intercourse" OR "unwanted intercourse"
	OR "forced penetration" OR "unwanted penetration" OR rape OR
	"sexual violence" OR "unwanted touching" OR "forced touching" OR
	"sexual harrassment" OR "physical harm" OR "corporal punishment"
	OR "physical punishment")) AND (instrument* OR scor* OR screen*
	OR scal* OR question* OR report* OR measur* OR inventor* OR
	interview* OR survey* OR test* OR construct* OR evaluat* OR
	analys* OR assess*) AND (valid* OR reliab* OR psychometric* OR
	accura* OR "sensitivity" OR "specificity" OR "ROC" OR "AUC") NOT
	("substance abuse" OR "substance misuse" OR "alcohol abuse" OR
	"alcohol misuse" OR "drug abuse" OR "drug misuse")) and English or
	Spanish or German or French (Languages) and Articles or Proceedings
	Papers (Document Types)