



Testimony taking in cases of child sexual abuse (CSA): A systematic review

Toma de declaraciones en caso de abuso sexual infantil (ASI): Revisión sistemática

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Resumen

El abuso sexual infantil (ASI) es una grave problemática global que impacta a millones de niños. La psicología de la memoria y del testimonio han reconocido distorsiones en el recuerdo, pero también ha creado estrategias para mitigarlas al tratar los testimonios de menores abusados. Este estudio se centra en los aportes de estas ramas psicológicas para obtener testimonios confiables en casos de violencia sexual infantil. Tras una revisión sistemática de dos décadas según los lineamientos PRISMA, con 61 investigaciones analizadas, se categorizaron los resultados en: procedimientos de entrevista, involucrados y características del menor. Se evidenció que los relatos de niñas y niños, incluso en edad preescolar, pueden ser coherentes y detallados si se recopilan adecuadamente.

Palabras clave: Abuso sexual infantil. Psicología de la memoria, Psicología del testimonio

Abstract

Child sexual abuse (CSA) is a serious global problem that impacts millions of children. The psychology of memory and testimony have recognized distortions in recall, but has also developed strategies to mitigate these distortions in dealing with the testimonies of abused children. This study focuses on the contributions of these psychological branches to obtaining reliable testimony in cases of child sexual violence. After a two-decade systematic review according to PRISMA guidelines, with 61 research studies analyzed, the results were categorized into interview procedures, involved parties and child characteristics. It was found that the accounts of children, even at pre-school age, can be coherent and detailed if properly collected.

Keywords: Child sexual abuse, Psychology of memory, Psychology of testimony.



INTRODUCTION

Child sexual abuse (CSA) is an issue that affects millions of children worldwide. According to the United Nations Children's Fund (UNICEF), it is estimated that at least one in five females and one in thirteen males have experienced childhood sexual abuse worldwide (Berlinerblau, 2017). These figures show that CSA is a serious and widespread problem, which requires attention and action on the part of governments, professionals and society in general.

Over the past 40 years, the psychology of memory and the psychology of testimony have identified various distortions that can modify memory or even suggest that these can be implanted (Loftus & Palmer, 1974; Loftus & Pickrell, 1995; Otgaar et al., 2022). However, research has not only identified the existence of memory distortions, but has also generated a set of specific knowledge to avoid or minimize such distortions from occurring and, in this way, affect the achievement of justice (Diamond et. al., 2020; Loftus, 1995; Otgaar et al., 2019; Sumampouw et al., 2020; Wixted & Wells, 2017).

In view of this, obtaining testimony becomes especially relevant when dealing with minors, as it can be particularly difficult due to their vulnerability and the specific characteristics of the child memory process. Feelings of fear, shame and guilt, which are often present in these situations, can interfere with obtaining reliable testimony (Jiménez-Cortés and Martín-Alonso, 2006; Muñoz et al., 2016; Vara et al., 2021).

With the use of appropriate interviewing techniques and protocols, the testimonies of minors can be even more accurate and reliable than those of adults (Goodman *et al.*, 2014). However, it is essential that the evaluation and treatment of the testimonies of minors who are victims of sexual abuse be carried out by trained

professionals, since this crime can have serious consequencesonthepsychological and emotional development of the affected population (Muñoz et al., 2016; Vara et al., 2021). The present study focuses on exploring the specific contributions of the psychology of testimony and the psychology of memory in obtaining reliable testimonies of minors in cases of sexual violence, based on the scientific evidence of the last 20 years. That said, the research question was formulated as follows: According to the high-quality scientific evidence of the last two decades, what are the specific contributions of the psychology of testimony and the psychology of memory in eliciting testimony in cases of child sexual abuse (CSA)?

It should be noted that, although several studies found in the literature reviewed do not use inclusive language, we are aware of the political importance of its use. Therefore, we will opt for gender-neutral expressions and pronouns, as well as masculine and feminine pronouns, as long as this does not generate confusion.

METHOD

A narrative-type systematic review was conducted, this being an analysis of a collection of quantitative studies that have used diverse methodologies (Siddaway et al., 2019).

Likewise, the PRISMA methodology (Preferred Reporting Items for Systematic Reviews and Meta-Analyses, Page et al., 2021) was used as a basis to guarantee its transparency, objectivity and reproducibility. An exhaustive search was carried out during January-March 2023 in the Apa databases PsycNet, Scopus, Web of Science and Proquest. In the case of Web of Science and Scopus, as they are multidisciplinary databases, the search was limited to the fields of Psychology and Law. Regarding the search strategy, a string was made with the variables of interest (Table 1):

Table 1Search string

Database String (("context" OR "settings" OR "timing" OR "setting interview" OR "disclosure" OR "rapport" OR "disabilities" OR "event" OR "recommendation" OR "interviewer bias" OR "forensic interview" OR "investigative interviews" OR "interview" OR "drug" OR "alcohol" OR "cognitive processes" OR "cognitive factors" OR "Bias" OR "schemes" OR "repression" OR "anxiety" OR "emotion" OR "depression" OR "post-traumatic disorder" OR "trauma" OR "stress" OR "psychopathology" OR "age" OR "race" OR "sex" OR "gender" OR "cross-Apa PsycNet, race effect") AND ("child" OR "children" OR "infant" OR "kid" OR "youth" OR "young" Scopus, Web OR "childhood" OR "preschool child" OR "teen" OR "teenager" OR "adolescent" OR of Science and "school child" OR "minors" OR "minor") AND ("memory" OR "repressed memory" OR Proquest. "false memory" OR "psychology of testimony" OR "acquiescence bias" OR "familiarity bias" OR "episodic memory" OR "recall" OR "mental recall" OR "long term memory" OR "suggestibility" OR "retrospective memory" OR "memory trace" OR "early memories" OR "amnesia" OR "dissociative amnesia" OR "defense mechanism" OR "delayed memories" OR "memory training") AND ("abuse" OR "child abuse" OR "sexual child abuse" OR "sexual abuse" OR "neglect") AND ("child witness" OR "child eyewitness testimony" OR

"eyewitness memory" OR "eyewitness" OR "witness"))

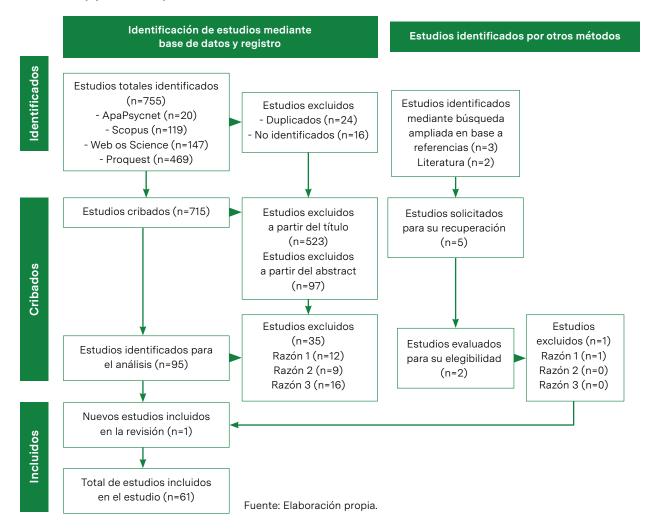
The inclusion criteria for the search were: (1) Articles from scientific journals in Spanish and English, related to the study variables, (2) Articles published from the year 2000 onwards. As for the exclusion criteria, following the PRISMA methodology (Page et al., 2021) the following studies were not considered to safeguard the quality and objectivity of the information: (1) Theses, book chapters, commentaries, opinions, (2) Systematic review articles and/or meta-analysis because they do not contribute to the objective of the study, which is to gather quantitative evidence, (3) Articles that do not mention the tools used or are incomplete.

Figure 1 shows a PRISMA flow diagram illustrating the selection process for this systematized review. The initial search yielded 755 documents; from these, the following were excluded: duplicate studies (24), unidentified studies (16), articles whose title was not related to the study objective (523), articles whose abstract was not related to the study objective (97), articles that did not meet the exclusion criteria (35). In order to avoid publication bias, we used 1 document referring to gray literature. Following the criteria applied, a total of 61 articles that met

the established criteria were obtained. After the analysis, the articles were categorized according to the hierarchy of levels of evidence for health sciences research proposed by the Joanna Briggs Institute (JBI): Level 1 (Experimental designs), Level 2 (Quasi-experimental designs), Level 3 (Analytical/observational designs), Level 4 (Descriptive/observational designs) and Level 5 (Expert opinion).

Regarding bias control, the recommendations proposed by Siddaway et al. (2019) and complemented by those used by Van Zyl et al. (2024) were taken into account. First, a database search and a documented strategy were carried out to ensure transparency and objectivity in the process. Also, we proceeded to independent review by two experts using the levels of scientific evidence defined as established by Joanna Briggs Institute (JBI, 2017). After completing the evaluations, the results were compared. Any disagreements were resolved by joint discussion, mediated by a third reviewer to ensure objective and consistent decisions, which reinforced the reliability of the process. Finally, it was decided to keep the original data collected, used and analyzed.

Figure 1
Flowchart by phase of systematic review



RESULTS

The findings of the 61 investigations were reviewed. These were grouped into 3 categories based on the postulates of Delgado *et al.* (2023).

As well as an analysis of the most salient themes of the literature analyzed. These were Category I: Interview procedure (See Table 2), Category II: Actors involved (See Table 3), and Category III: Child characteristics (See Table 4).

 Table 2

 Category I: Interview procedure

Subcategory	Author	Sample	Level	Findings
Rapport	Foster et al. (2022)	114 girls and boys (ages 7 to 13, M = 10.11)	1	It was found that the rapport between interviewer and child is important in the disclosure of abuse. Children with a better rapport were more willing to disclose.
	Hershkowitz et al. (2015)	613 interviews using the SP and 811 interviews using the RP with alleged victims of child abuse	4	

	Andrews et al. (2015)	12,169 Transcripts of 120 girls and boys ages 6 to 12.	4	
	Andrews and Lamb (2014)	Transcripts of 115 girls and boys aged 3 to 12 years old	4	Most research supports the use of open-ended
	O'Neill and Zajac (2013)	88 girls and boys aged 5 and 6 years and 108 boys and girls aged 9 and 10 years	1	questions. They also suggest discouraging repetition of questions and cross-examination, as this increases the children's contradiction and erroneous retraction of their responses.
	Pichler et al. (2021)	73 recordings of complainants' interviews (15 men and 58 women) and subsequent crossexamination during the trial.	4	
	Brown et al. (2017)	112 girls and boys (4-12 years old)		In interviews, interviewers interacted differently with children with Autism Spectrum Disorder (ASD), preferring hints over direct questions. In the case of children with Intellectual Developmental Disabilities (ID), more choice questions were used, especially with moderate ID, and more leading questions were asked toward this group compared to typically developing children.
	Andrews and Lamb (2014)	Transcripts of 115 girls and boys aged 3 to 12 years old	4	_ There is a tendency among interviewers, police
Type of question	Stolzenberg and Lyon (2014)	Case transcripts of 72 children in child sexual abuse cases	4	and judicial personnel to use suggestive and closed-ended questions. Although police officers are aware of protocols, such as the
	Powell and Hughes-Scholes (2009)	136 videotaped child witness statements made by 95 individual police officers (76% female) from child abuse investigation units	4	NICHD, and perceive that they use them, in practice they do not follow the guidelines established by these protocols during the interviews.
	Klemfuss et al. (2017)	223 transcripts of severe child sexual abuse cases	4	The lawyers did not adjust their questions to be more productive in terms of children's responses, although they did ask structured questions regarding time and event changes. This could be complicated for young children.
	Lee and Kim (2021)	137 transcripts research interviews, 57 with children under 13, 55 with people with disabilities (including people with ID)	4	For a minor's testimony to be considered as valid evidence, it is crucial that he or she responds in a detailed and spontaneous manner to open-ended questions from the interviewer, as this is perceived as an indicator of greater credibility in the victim's memory.
	Earhart et al. (2014)	76 transcripts: 38 that included the basic rule "don't know" and 38 that did not. The minors were between 4 and 13 years old (M = 8.70, SD = 2.29) and 78 % were female.	4	Interviewers often rejected "I don't know" responses while cross-examining on the same topic nearly 30% of the time. However, encouraging the child to say "I don't know" at appropriate times did not increase the likelihood that the child would use it.

	Andrews and Lamb (2019)	56 trial transcripts of girls and boys aged 5 to 17 years old	4	The children demonstrated greater productivity in addressing questions focused on key information compared to peripheral questions, especially on action items. However, they faced difficulties in answering central questions, showing less responsiveness, more uncertainty and self-contradictions. Despite age differences, legal staff maintained the same tendency when questioning minors, without varying the centrality of the information or the topic of the questions.
	Evans and Roberts (2009)	49 girls and boys between 3 and 6 years old	1	The application of the expansion-paraphrasing, exemplified by the expression "tell me more", generated reports from children twice as long and with six times more accurate detail than those who responded with yes/no. Despite this, children who used expansion-paraphrasing also had a slight increase in inaccurate details in their reports.
	Wyman et al. (2022)	104 children from 8 to 13 years old	1	In interviews with cognitive instructions, children gave more detailed and extensive accounts of transgressions without compromising temporal accuracy. Although these instructions increased the amount of information about the theft, they did not affect the overall honesty of the reports or reduce false allegations.
Instructions Visual aids	Earhart et al. (2017)	154 transcripts of 17 boys and 41 girls aged 7.01-17.54 years old.	4	It was observed that children were not fully or incompletely instructed on the rules of the interview. Also, comprehension questions were frequent, but practical questions were rare, and yes/no format questions were unlikely to effectively assess the child's understanding.
	Kyriakidou et al. (2014)	Experiment 1: 156 minors aged 6 to 12 years, with a mean age of 9 years (78 girls and 78 boys). Experiment 2 152 minors (88 girls and 64 boys) aged 9 to 13 years, with a mean age of 10.6 years (SD = 0.98).	1	Performing with eyes closed may benefit children when answering visual questions, but not always.
	Zhang et al. (2019)	121 minors (60 girls and boys in the younger group (M = 7.40 years, SD = .43) and 61 girls and boys in the older group (M = 8.91 years, SD = .42).	1	Using a visual aid (e.g., timeline) did not have clear evidence of support in cases of repeated events. Children in the timeline condition were less accurate and more likely to make source monitoring errors than those in the control condition.

Protocol used	Otgaar et al. (2019)	108 girls and boys aged 5 to 10 years, with a mean age of 7.32 years (SD = 1.33).	1	Children interviewed with the adapted NICHD protocol showed greater retrieval-enhanced suggestibility when the interview was not immediate. In contrast, if the interview occurred immediately, the NICHD protocol resulted in higher correct response scores for the misinformation items.	
	Alonzo-Proulx, and Cyr (2016)	18 police officers with an average of more than 3 years of experience in child sexual abuse cases	4	The use of the NICHD protocol along with the age of the child was one of the strongest predictors of the number of core details revealed by the child.	
Artificial intelligence	Hsu and Teoh (2017)	30 minors (M = 7.60, SD = 0.68), half with ASD (13 boys; 2 girls) and half neurotypical (13 boys; 2 girls).	1	The use of an AI to interview minors increased memory performance in minors, most strongly in children with ASD.	
Use of anatomical drawings	Poole and Dickinson (2011)	261 girls and boys from 4 to 9 years of age	1	The use of anatomically correct drawings in the interview had both beneficial and detrimental effects on tactile reports: More girls and boys in the body diagram-focused condition reported experiencing touch, but at the expense of greater numbers of suggested and spontaneous false reports.	
Designation of sexual parts	Burrows et al. (2017)	161 transcripts of field interviews with children aged 4 to 17 years.	4	The research suggests caution in following up on the meaning of terms for sexual body parts by children, as many minors, even in late adolescence, do not provide clear terms for their sexual body parts.	
	Hubbard et al. (2016)	87 girls and boys between 4 and 10 years old	1		
Multiple	Szojka et al. (2022)	76 girls and boys (M= 9.34)	1	It has been shown that multiple interviews - can help the child to provide a more complete	
interviews	Danby et al. (2017)	167 minors between 5 and 9 years old	1	can neip the child to provide a more complete testimony. However, the accuracy of the detail diminished with each interview.	
	Katz and Hershkowitz (2013)	56 girls and boys (Medad = 10.36, SD = 2.32)	1		
Mental reintroduction	Dietze et al. (2010)	24 minors aged 6 and 24 boys and girls aged 12	1	The mental reintroduction instruction improved response accuracy and decreased errors compared to the standard recall instruction, independent of verbal confirmation.	
Drawing	Macleod et al. (2016)	35 boys and 44 girls aged 5 and 6 years (M = 5.9, SE = 0.05).	1	Children who were asked to draw about the event, or who were interviewed without drawing, made few errors. In contrast, children who drew without receiving specific instructions reported more errors that were associated with both confabulation and fantasy.	
Time	Lawson and London (2017)	77 girls and boys aged 9 years	1	After one year, girls and boys recalled the target conversation topic, but essential recall	
Time				 of statements was limited. In addition, minors demonstrated a self-bias in answering yes/no 	

 $Note: Inclusive\ phrasing\ is\ used\ (e.g.,\ "girls\ and\ boys,"\ minors).\ English\ texts\ use\ "children"\ or\ other\ words.$

Table 3
Category II: Actors involved

Subcategory	Author	Sample	Level	Findings			
	Connolly et al. (2010)	Case reports of 52 minors of child sexual abuse and 49 adults claiming to have sexually abused minors	4	Jurors lack sufficient knowledge about child sexual abuse and the reliability of children's testimonies, leading to uncertainty about the accuracy of children's memories and accounts. Despite this, comments indicate that minors tend			
	Cossins et al. (2009)	659 participants eligible to serve as jurors	3	to be perceived as more honest than adults, unless they have been exposed to suggestive influences.			
Jurors	Buck et al. (2011)	463 students within the jury- eligible population	1	In the absence of expert testimony, mock jurors did not consider the quality of the forensic interview when making verdict decisions. However when expert testimony was presented, mock jurors showed a greater tendency to return guilty verdicts regardless of the quality of the interview. In addition, expert testimony enhanced the mock jurors' knowledge of the underage witnesses.			
Perception of ID	Henry et al. (2011)	60 minors: 31 girls/boys with ID and 29 children with normal development (TD) and 30 (54 males, 76 females) mock jurors"	1	Mock jurors rated the testimony of children with ID as less credible than that of a TD comparison group of the same age. This was largely because the transcripts of the girls and boys with ID contained less detail than those of the TD children. Anxiety and mental age did not influence perceived levels of credibility.			
Perception of the child's capacity	Priolo-Filho et al. (2018)	280 participants, who were family court professionals (62.5% women, ages 56 to 66 years).	3	For the scenario involving allegations of child sexual abuse, practitioners who considered young children to be less accurate informants or who read about the mother as the alleged alienator were more likely to label the scenario as a case of parental alienation.			
Parents' support	Kim et al. (2011)	214 girls/boys between 8 and 13 years old	3	Statement competence in child victims of sexual abuse is related to emotional states and parental support rather than to child factors such as psychopathology or age, and appears to be more reliable with a single traumatic experience.			
Mothers' attitude	Principe & London (2022)	169 minors and their mothers recruited. The ages of the minors ranged from 46 to 68 months (M = 55 months, SD = 6.15; 53% female).	1	Mothers instructed to seek accurate accounts were more controlling in their questioning, probably to improve the accuracy of their children's recall. However, they showed greater propensity to introduce biases, including new ideas consistent with incorrect information, compared with mothers focused on naturalness.			

Note: Inclusive phrasing is used (e.g., "girls and boys," minors). English texts use "children" or other words.

Table 4Category III: Characteristics of the minor

Sub-category	Author	Sample	Level	Findings
	Gudjonsson et al. (2020)	134 girls, boys and adolescents aged 7 to 17 years. 73.1% of them were female. The women (M age=12.49) were significantly older than the men (M=10.53).	1	
	Vagni et al. (2021)	114 minors, of whom 89 were female (78%) and 25 male (22%) subjects aged 8-16 years (M = 12.01, SD = 2.71), of whom 42 were 8-10 years old (36.8%), 36 were 11-13 years old (31.6%) and 36 were 14-16 years old (36.1%).	3	
History of Abuse and Memory	Mcwilliams et al. (2014)	35 participants between 9 and 15 years old.		Children who have suffered sexual abuse may develop Post-Traumatic Stress Disorder (PTSD), increasing their susceptibility to
	Benedan et al. (2018)	75 abandoned and 75 control children	1	immediate suggestibility. In addition, they showed a greater propensity to give in to tricky questions.
	Ahern et al. (2016)	126 maltreated girls and boys (n = 126) and 136 non-maltreated minors (n = 136) aged 4-9 years (M = 6 years 6 months, SD = 1.69; 51% female).	1	
	Goodman et al. (2001)	28 boys and 42 girls. Ages ranged from 3 years 8 months to 10 years 11 months (M = 7 years 6 months).	1	
Child in home with intimate partner violence	Gustafsson et al. (2013)	140 minors. 53% of the children were female, 52% were African-American (48% were European-American)	3	Mother-reported intimate partner violence at 30 months of age was a significant predictor of short-term memory, working, and 60-month-old, even after controlling for children's sex and race, family income-to-needs ratio, children's expressive vocabulary, and harsh and intrusive maternal behavior.
ID	Agnew & Powell (2004)	80 minors aged 9 to 12 years with mild or moderate ID	1	Girls and boys with ID may be less likely than children without ID to provide a narrative account, as the former's account tends to
	Murfett et al. (2008)	78 girls and boys (9-12 years old) with ID	1	include proportionally fewer grammatical elements than those of both control groups.
Age	Miragoli et al. (2020)	87 trial transcripts of child sexual violence from 4 to 17 years of age	4	Age affects the formulation of questions and responses in witnesses. In younger children, it is best to use open-ended questions despite interview challenges. As they get
	Feltis et al. (2011)	50 children under 4 years of age and 56 children under 7 years of age	1	older, they are less prone to lying and suggestibility, offering more detailed and grammatically complex narratives.

	Chae et al. (2011)	322 girls and boys (178 girls and 144 boys), aged 3 to 5 years (M = 4.1 years, n = 106), 6 to 10 years (M = 7.8 years, n = 154) and 11 to 16 years (M = 12.3 years,62).	1	
	Andrews et al. (2017)	Nine cases (11 girls and boys) were from Aberdeen, nine cases (19 girls and boys) from Edinburgh, 12 cases (16 girls and boys) from Glasgow, one case (one boy) from Inverness, three cases (five girls and boys) from Livingston and two cases (four girls and boys) from Perth.	4	
	Gosse and Roberts (2014)	45 children, composed of 24 females and 21 males. 15 girls and boys aged 4 years (M = 53.93 months, SD = 3.88), 15 girls and boys aged 5 to 6 years (M = 68.87 months, SD = 7.68) and 15 girls and boys aged 7 to 8 years. age (M = 92.47 months, SD = 7.05).	1	They also tend to show difficulty in recalling information due to their limited knowledge of temporal patterns and linguistic abilities. Therefore, the use of timelines is recommended.
	Wyman et al. (2019)	127 girls and boys (N males = 63, N females = 64) between the ages of 6 and 11 years (M = 8.73 years, SD = 1.61).	1	Cognitive load did not appear to affect the directness of statements, and age proved to be a significant predictor of disclosure. Minors aged 6 to 7 years and 8 to 9 years were more likely to rely on the direct question to disclose theft, whereas minors aged 10 to 11 years were more forthcoming and likely to do so in the free recall question.
	Eisen et al. (2007)	328 patients (179 girls, 149 boys). The minors were stratified into three age groups: 3 to 5 years (M =4.1 years), 6 to 10 years (M =7.8 years) and 11 to 16 years (M=12.3 years)."	1	Older people with higher cognitive performance made fewer inaccuracies. In girls and boys with dissociative tendencies, cortisol levels and trauma symptoms were related to more memory errors, whereas, in those with less dissociative tendencies, there was no association between cortisol, trauma and memory errors.
	Flogliati & Bussey (2015)	149 preschool children (M = 6 years) and 3 primary school children (M = 8 years and 10 months).	1	The results suggest that cross-examination is an effective tool for uncovering the truth in cases of false child testimony and underscore the importance of protecting minors from being coached to give false testimony. However, cross-examination reduced the truthfulness of minors who had not been coached.
Accuracy of	Price et al. (2006)	45 girls and boys aged 7-8 years (M = 7.82 and SD=0.78).	1	Children who experienced a single event tend to provide more accurate information, while those who experienced repeated
declaration in repeated events	Sharman et al. (2011)	177 girls and boys between 4-5 years old and 206 girls and boys between 6-8 years old.	1	events are more likely to report internal suggestions and intrusions in their accounts, especially when the events are intensive and occur multiple times in a single day.

Emotional state of the child	Karni-Visel et al. (2019)	Transcripts of forensic interviews (178 using the Revised Protocol and 100 using the NICHD Standard Protocol) with victims of child physical abuse.	4	Emotional expressiveness was associated with greater information reporting. Likewise,	
	Karni- Visel et al. (2022)	198 interviews with minors aged 4-14 years (M = 9.36, SD= 2.37) alleged victims of repeated physical abuse perpetrated by family members, conducted using the Revised NICHD Protocol that emphasizes a supportive interview style.	3	verbal expression of negative emotions was associated with the production of more specific details and less generic information while positive emotions were associated only with more specific information.	
Sustained testimony	Saykaly et al. (2016)	96 minors (females N=45), 9-12 years (M=131 months; SD= 14.77).	1	Girls and boys are able to maintain truths and lies across various types of questions (including cognitively loaded questions); additionally, minors who tell lies have more difficulty maintaining accusation than those who tell truths. Those who tell lies have difficulty responding accurately to sequential recall questions (both chronological and in reverse order) and are not consistent across questions.	
Vocabulary of the minor	Chae et al. (2014)	Girls and boys (N = 176) 3-5 years old	3	The results revealed that children with higher vocabulary skills produced more complete and accurate memories. Minors who were given the verbal label interview recalled more information, including both correct and incorrect details. Children with low vocabulary answered direct questions more accurately if they were given the verbal label interview than if they were not given the verbal label interview.	
Psychopatho- logy	Mcwilliams et al. (2014)	Experiment 1: Participants (N = 35) between 9 and 15 years old. Experiment 2: Participants (N = 31) between 9 and 15 years old.	1	Younger age and higher levels of trauma- related psychopathology significantly predicted direct question commission errors when positive family interaction had been seen, but not when negative family interaction had been shown.	

Note: Inclusive phrasing is used (e.g., "girls and boys," minors). English texts use "children" or other words.

DISCUSSION

Research in psychology has provided guidelines and techniques to reduce distortions in testimony, promoting reliable statements in legal proceedings (Diamond et al., 2020; Szojka et al., 2022; Wixted & Wells, 2017; Wyman et al., 2019). Although some protocols still do not fully incorporate findings from the Psychology of Testimony and Memory (Berrocal-Aragonés et al., 2024), we consider the results of this systematic review relevant, which we will discuss next.

Regarding the category Interview Procedure, the literature reviewed highlights that children's accounts, even at preschool age, can be coherent,

accurate, and detailed as long as the testimonies are collected appropriately (Andrews et al., 2015; Pichler et al., 2021; O'Neill & Zajac, 2013). However, it is essential to recognize that they are also vulnerable to suggestion. If the same question is repeated to them multiple times, they may be predisposed to create false memories (Andrew et al., 2015; Flogliati & Bussey, 2015). This is especially the case if the child does not have a clear initial response, which leads to the fact that they may reduce the accuracy of their statements (Brainerd & Reyna, 2019; Krahenbuhl & Blades, 2006). In the case of girls and boys with mild or moderate ID, they are known to be able to provide accurate information about events, although their recall is less complete when answering free narrative questions and less accurate when facing specific questions compared to other groups of the same age (Agnew & Powell, 2004; Murfett et al., 2008).

Regarding the category Actors Involved, the influence of the mother-child dynamic in the process of remembering and recounting past experiences stands out (Principe & London, 2022). The instructions given to the mother to help her child to give a detailed account have implications on the accuracy of the children's memories, biasing them and/or introducing new ideas. Therefore, it is necessary to consciously and carefully approach interviewing communication strategies directed toward mothers so that their intervention does not influence the accuracy of children's memory. On the other hand, in cases of sexual abuse, the levels of support and emotional stability provided by mothers and fathers play a crucial role in the child's ability to effectively communicate the traumatic events they have experienced (Kim et al., 2011).

In relation to the category Child Characteristics, the history of abuse, such as sexual and physical abuse, plays a crucial role in the recall process. Several studies (Benedan et al., 2018; Gudjonsson et al., 2020; Mcwilliams et al., 2014; Vagni et al., 2021) suggest that minors who have experienced violence may develop PTSD, which not only affects immediate suggestibility, but also has a significant impact on delayed suggestibility and delayed recall, modifying the original memory with the inclusion of suggestive elements. These minors are more likely to be influenced by outside information or suggestions when asked about the details of their traumatic experiences. Even if they retain accurate information, they are susceptible to manipulation in interviews with leading or misleading questions (Benedan et al., 2018; Gudjonsson et al., 2020). The explanation lies in the emotional and psychological repercussions of abuse, which make them more susceptible to external influences, such as recommendations from authority figures or peers. Their elevated level of emotional distress makes them more likely to settle for suggestions to avoid further conflict or harm (Ahern et al., 2016; Gudjonsson et al., 2020).

Therefore, following the line of previous research in this area (Loftus & Palmer, 1974; Loftus & Pickrell, 1995, Delgado et al., 2023) it is necessary to insist that when asking questions during the

collection of statements these are open-ended, in order not to favor suggestion (Vagni et al., 2021). Likewise, care must be taken with the avoidance of questions or misunderstandings on the part of girls and boys (Benedan et al., 2018; McWilliams et al., 2014), since they can influence their ability to process and respond adequately to what is posed to them, thus affecting recall. This difficulty in understanding can be remedied with age (Chae et al., 2011; Feltis et al., 2011; Miragoli et al., 2020).

Along the same line, intimate partner violence has an impact on the cognitive development of minors, with early exposure generating negative effects influenced by psychological and contextual factors (Gustafsson et al., 2013; Miranda et al., 2021). In the home it can induce stress and anxiety, neurobiologically affecting the developing brain and impairing memory (Cabrera et al., 2020; Miranda et al., 2021). It is crucial to provide support to these minors during statement taking, ensuring a safe environment for sharing experiences (Estrada, 2019; Saywitz et al., 2019). Training of professionals is vital, as they must be aware of the possible effects of violence on cognitive and emotional development, using appropriate interviewing techniques to avoid revictimization or further harm (Vara et al., 2021). It is emphasized that children can sustain their statements, whether false or true, in the face of questions with high cognitive load, although those who present false accusations may face difficulties, often motivated by fear of punishment or the desire to protect others, which can lead to indoctrination processes (Saykaly et al., 2016; Vara et al., 2021). In relation to children who have experienced multiple events, Price et al. (2006) found that those who experienced a single abusive event tended to provide more accurate information compared to those who experienced multiple events. Even those who experienced the repeated event intensively showed a greater propensity to consistently report intrusions. The Fuzzy Trace Theory (Brainerd and Reyna, 2002; Blalock and Reyna, 2016) explains that people retain general meaning (essential trace) better than specific details (literal trace) of repeated events, leading to less detailed or inconsistent statements on nonessential aspects in cases of repeated abuse (Brainerd and Reyna, 1990; Delgado et al., 2023).

Regarding the emotional state of girls or boys, findings suggest that emotional expression seems to have a significant impact on the informational

richness of their communication (Karni-Visel et al., 2019; Karni- Visel et al., 2022). This means that when they express negative emotions through words, they provide more specific information and less generic information. In contrast, when they express positive emotions, these are associated with more precise information but not with decreased generic information.

The systematic review carried out points out the lack of recent research on the connection between substance use in minors, memory and testimony taking. Therefore, it is essential to conduct more experimental studies in the field of the psychology of testimony and memory, with a special focus on the child and adolescent population. Also, the use of artificial intelligence (AI) in interviews with minors has shown a significant increase in memory performance, especially in girls and children with ASD (Hsu & Teoh, 2017). The recent boom in generative Al evidences the need to strengthen research on its use in CSA cases (Kissos et al., 2020). It is a matter of carefully balancing the use of advanced technology with human factors in obtaining information from children, suggesting the importance of developing protocols that maximize accuracy without compromising integrity. Research on parental attitudes and their impact on their children's reporting is also considered necessary, as the results raise important dilemmas about best practice in interviewing children, especially in legal contexts (Principe & London, 2022).

Limitations of the study include the possibility of improving the evidence by including more databases. Although the gray literature search mitigated publication bias, only one forensic interview protocol was found that met the criteria. Although the PsyArXiv search yielded no results, it is acknowledged that relevant preprints could have been found on other platforms.

CONCLUSIONS

Sixty-one investigations regarding testimony taking in cases of child sexual abuse were found with adequate evidence of validity and reliability. It was identified that the variables that most influence testimony taking are the type of questions asked, the mental health of the child,

since those who have suffered sexual abuse or other traumas may be more susceptible to suggestion and have difficulty remembering the details of the event; finally, the influence of the parents in the process. On the other hand, more research is needed on the connection among substance use in minors, memory and testimony taking, and the use of artificial intelligence in interviewing minors. Finally, this systematic review establishes that, in order to obtain more accurate statements from child victims of child sexual abuse, open-ended questions should be asked, cross-examination should be avoided, a relationship of trust should be established with the child, the child's characteristics should be taken into account, the professionals conducting the interview should be trained, and parental influence in the process should be avoided.

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Las referencias marcadas con un asterisco indican los estudios incluidos en la revisión sistemática.

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