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Research Article

### SEXUALLY TRANSMITTED INFECTIONS IN SEXUALLY ABUSED CHILDREN

Suzanne Talal Kutbi <sup>1</sup>, Flwah Abdulelah Aljanoubi <sup>2</sup>, Yara suleiman alsulami <sup>3</sup>, Salma saad Alqeshtaini <sup>2</sup>, Haneen Khaleed Almoutairi <sup>3</sup>, Rawan Layih Alanazi <sup>3</sup>, Ayah Tarik Ghoulah <sup>2</sup>, Reham Mutad Aljohani <sup>2</sup>, Hajar Muheil Alsahli <sup>2</sup>, Rana Faisal alqahtani <sup>3</sup>,

<sup>1</sup>Pediatric infectious diseases and infection control consultant, Ministry of health, Jeddah, Saudi Arabia

<sup>2</sup>Medical Student, Alfarabi College of Medicine. Riyadh, Saudi Arabia.

<sup>3</sup>Medical intern, Alfarabi college of medicine Riyadh Saudi Arabia

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#### Abstract:

**Background:** Sexually transmitted infections (STI) are a worldwide health problem and became a concern and burden on the healthcare systems. STIs are not so common in sexually abused children, however, when present, they can be crucial to making the diagnosis of sexual abuse and taking positives steps in protection of the children. The incidence of STIs in sexually abused children must be assessed as it may be useful in prevention of these infections and giving the appropriate attention to the problem of abuse of children may help in protection manners of these children.

**Aim:** This study aims to review and discuss results of previous studied regarding prevalence, types and diagnostic implications of sexually transmitted infections in sexually abused children.

**Methodology:** This is a systematic review was carried out, including PubMed, Google Scholar, and EBSCO that examining randomized controlled trials, observational, and experimental studies which study STI in sexually abused children.

**Results and Conclusion:** The study included 6 studies and concluded that; sexually transmitted infections can be transmitted to children by sexual abuse. Any child with diagnosed STI must be assessed for sexual assault. Prevalence of STI, like *C. trachomatis* and *N. Gonorrhea*, which is low in children tested for potential sexual assault, has an effect on their favorable predictive value.

**Keywords:** sexually transmitted infections, sexually abuse, children, STIs, sexual abuse, sexual assault

#### Corresponding author:

**Suzanne Talal Kutbi,**

Pediatric infectious diseases and infection control consultant,  
Ministry of health, Jeddah, Saudi Arabia

QR code



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**INTRODUCTION:**

Sexually transmitted infections (STI) are a worldwide health problem and became a concern and burden on the healthcare systems [1]. STIs comprise a wide range of infections and conditions that are transmitted mainly by sexual activity such as human immunodeficiency virus, human papillomavirus, chlamydia, genital herpes, gonorrhea, syphilis and trichomoniasis [2].

Sexual abuse of children is a growing phenomenon around the world defined as sexual relations with the child through physical force, threat, or intimidation. It was reported that; approximately 794 000 children were abused in USA in 2007 [3]. STIs are not so common in sexually abused children, however, when present, they can be crucial to making the diagnosis of sexual abuse and taking positives steps in protection of the children [4]. Also, isolation of a sexually transmitted organism maybe an indication that abuse has occurred [5]. The prevalence of STIs in sexually abused children depends on the type of abusive exposure, genital symptoms, and the regional prevalence of STIs in the adults [6]. Multiple episodes of abuse increase STI risk by increasing the number of contacts with an infected child, and type of assault affect the rate of infection [7].

A clinician assessing a child victim for potential sexual assault must recommend checking for the possibility of sexually transmitted infections. Every case involves a personalized response, taking into account the conditions of the attack, the age of the child, features of the perpetrator and the occurrence of STIs in the society [8]. For most cases of sexual assault, the assessment is focused on the child's words, although there are hardly any visible evidence from the abuse. Sexually reactive behaviors, penetrating genital trauma, seminal traces or pregnancy in a child and occurrence of STIs beyond the incubation period of vertical transmission (*Neisseria gonorrhea*, *Chlamydia trachomatis*, *Treponema pallidum*) are all indications of sexual assault.

Nucleic Acid Amplification Test (NAAT), Cerebrospinal Fluid (CSF), Fluorescent Treponemal Antibody Absorption Test (FTA-ABS), Rapid Plasma Reagin (RPR), *Treponema pallidum* Particle Agglutination (TP-PA), and Venereal Disease Research Laboratory (VDRL) are all laboratory tests that assess in evaluation of STIs [9].

If left untreated; STIs may cause long term health hazards. Tertiary stage syphilis may cause damage in nervous system and cardiovascular system, and

congenital syphilis may cause serious complications or child death [10]. Also, specific strains of HPV may lead to cervical, oropharyngeal, or rectal cancer. Additionally, STIs have been concomitant with augmented rates of human immunodeficiency virus (HIV) transmission [11].

The incidence of STIs in sexually abused children must be assessed as it may be useful in prevention of these infections and giving the appropriate attention to the problem of abuse of children may help in protection manners of these children.

**Aim of the Study:**

This study aims to review and discuss results of previous studied regarding prevalence, types and diagnostic implications of sexually transmitted infections in sexually abused children.

**METHODOLOGY:**

PubMed and EBSCO Data bases were used for the publications used in the study, as they are known to be high-quality sources of information. PubMed is one of the leading online databases established by the National Center for Biotechnology Information (NCBI). Articles regarding STIs among sexually abused children as well as other articles were used in writing the article. Limitation to the last ten years, and on English due to insufficient translation services have been applied. Papers were screened by names, and the abstracts reviewed 6 articles that were eligible. Criteria for inclusion: papers were chosen on the basis of importance to the topic, including one of the following topics: 'sexually transmitted infections, sexually abuse of children, STIs in sexually abused children' Exclusion criteria: all other publications that did not have either of these subjects as their main end, or repetitive research, and summary studies were omitted.

**Statistical Analysis:**

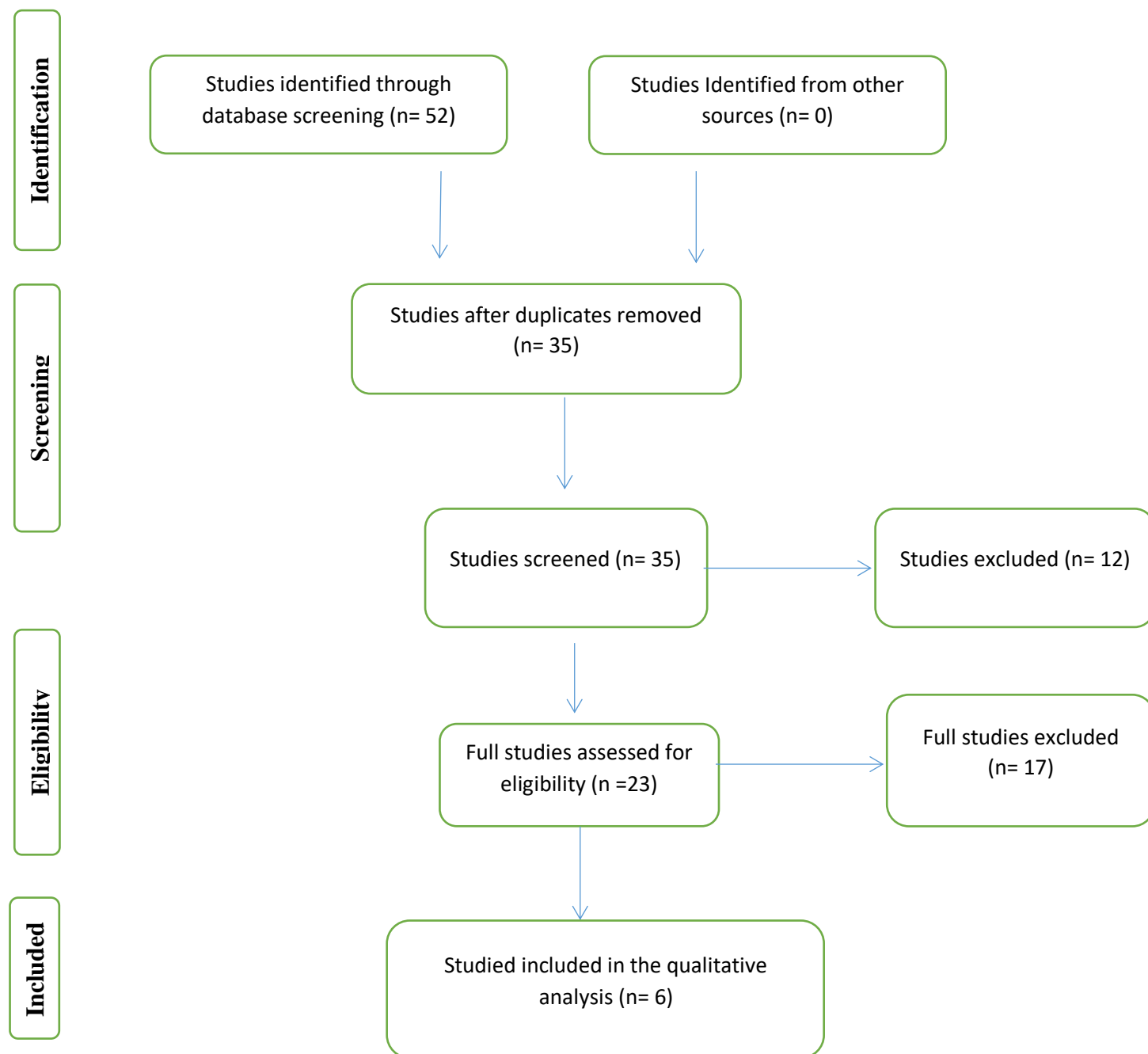
No technology was used to analyze the results. Information collected was derived on the basis of a particular type (Publication Title, Author's Name, Purpose, Description, Findings and Outcomes). This data were checked by the group members to obtain a uniform results. Double review of the results of each member has been implemented to ensure authenticity and eliminate errors.

**RESULTS:**

A total of 52 research used for the title screening contributed to the search. 35 of them had been used for abstract screening, which contributed to the omission of 12 papers. The remaining 23 full-text articles have been examined. The full-text revision helped lead to

exclusion of 17 studies and 6 were able to enroll for final extracting data (Table 1).

The included studies had different study designs.



**Figure (1): Flowchart of data extraction of the study**

**Table 1: Author, year of publication, study type, and study outcome:**

Author	Year of publication	Study type	Sample size	Outcome	Ref
White, Susanne T.	1983	A cross-sectional study	409 children	STI was identified in (13%) of studied children: 11.2% gonorrhea, 1.4% syphilis, 1% trichomoniasis, and 0.7% condyloma acuminata.	12
De Jong A. R.	1986	A cross-sectional survey	532 children	Prevalence if STI was reported as 6.2% (34 infections were detected in 33 children). Gonorrhea was present in (4.7%) of total sample, and other sexually transmitted diseases were identified in 9 children.	13
Kelly, P., & Koh, J.	2006	Retrospective review	2162 children	(88.3%) of all participants had screening test for STI; (2.8%) was found to have STI either by examination, laboratory investigation, or both. The prevalence was 5.6% in children aged 10 years or older and 1.2% in children under 10 years old.	14
Argent, A C et al.	1995	Retrospective study	96 children	20% (12 child) indicated evidence of child sexual abuse. 10 children had multiple infections. 61 children were reported to have Neisseria gonorrhea, 17 with Gardnerella vaginalis, 14 with Chlamydia trachomatis, 9 with Trichomonas vaginalis, and 9 with Treponema pallidum	15
Rebecca G. Girardet, et al.	2009	Cross sectional study	536 children	Prevalence of STI among sexually victimized children was reported to be less than 10%. C trachomatis was detected in (3.1%) and N gonorrhea in (3.3%) girls. T vaginalis was detected in (5.9%) of 85 girls by wet mount, (0.3%) of 384 children had a positive serologic screen for syphilis, and 0 of 384 had serologic evidence of HIV infection. 12 girls had a specimen for HSV-2 culture, (41.7%) of them had a positive result; (2.5%) of 283 had antibody evidence of HSV-2 infection.	16
Rouget, A.C., et al.	1988	Prospective study	332 female children (219 with validated sexual abuse compared to 113 non-abused ones)	The average age of abused children was 8.3 years old, 69% abused on multiple occasions. 35% were colonized with a pathogen or a potential pathogen, compared to a prevalence rate of 18.5% in non-abused children.	17

**DISCUSSION:**

In 2002, the WHO assessed that 73 million boys and 150 million girls under the age of 18 years had undergone numerous forms of sexual violence [18]. Argent, A C et al. [15] reported 20% indicated evidence of child sexual abuse. Finkelhor[19] carried out a comprehensive analysis of more over 2,000 children and families aged 2–17 years and have found that the prevalence of sexual violence was roughly 82

per 1,000 children. In 2009, a meta-analysis analyzed 65 studies in 22 countries and estimated that; 7.9 per cent of males and 19.7 per cent of females were all sexually assaulted by the age of 18. The highest CSA reported prevalence has been seen in Africa (34.4 percent). Europe, America and Asia also had incidence rate of 9.2%, 10.1% and 23.9% respectively. For females, 7 countries recorded prevalence estimates of more than one-fifth, i.e. 37.8 per cent in Australia, 32.2

per cent in Costa Rica, 31 per cent in Tanzania, 30.7 per cent in Israel, 28.1 per cent in Sweden, 25.3 per cent in the US and 24.2 per cent in Switzerland [20, 21]. An analysis of studies from 21 countries found that 7-36 per cent of females and 3-29 per cent of males recorded having been sexually assaulted through childhood [22].

Regarding prevalence of STIs among abused children; Rebecca G. Girardet, et al. [16] reported prevalence of STI among sexually victimized children was reported to be less than 10%. Kelly, P., & Koh, J. [14] reported that among studied abused children, only (2.8%) was found to have STI. This was lower than figures reported by De Jong A. R. [13] and White, Susanne T. [14] reported prevalence of STI as 6.2% and 13% respectively.

STIs, including such *N.gonorrhea* and *C.trachomatis*, are uncommon among pre-pubertal children who have sexual assault. GC disease is by far the most prevalent sexually transmitted infection identified in sexual assault victims, with a rate of between 2% and 5% [9]. *Neisseria gonorrhea* is perhaps the most prevalent STI identified by several pre-pubertal child abuse centers and few non-sexual transmission studies were released. The prevalence of *C. trachomatis* infection in sexually abused children is 2% to 13% [19]. Prevalence rates for *N.gonorrhea* and *C.trachomatis* reported by White, Susanne T. [12] as 11.2% gonorrhea, 1.4% syphilis, 1% trichomoniasis, and 0.7% condyloma acuminata while Rebecca G. Girardet, et al. [16] reported that *C trachomatis* was detected in (3.1%) and *N gonorrhea* in (3.3%) girls. Previous research showed that teenage females with sexual violence had far elevated incidence of *N. gonorrhea* and *C. Trachomatis*: up to 14 percent in some research [23, 24]. Numerous researchers have measured which victims are at increased risk of developing *N.gonorrhea* and *C.trachomatis* after sexual assault. Shapiro [23] noticed that sexually assaulted girls under twelve years of age with either *N.gonorrhea* or *C.trachomatis* were more likely to have vaginal discharge. Siegel et al. [24] suggested that pre-pubertal girls with *N. gonorrhea* had vaginal discharge while those with *C.trachomatis* had abnormal genital examinations.

An inexplicable genital or anal damage can be a sign of sexual abuse, and consequently the likelihood of sexual abuse must be in mind. Genital or anal discharge is also a sign for STI testing [25]. Argent, A C et al. [15] demonstrated that vaginal discharge was the most common presenting sign (76%), mainly in those less than 5 years of age (90%). Also, Rouget,

A.C., et al. [17] reported that few of studied children had severe vaginal tears, though 56% showed signs of subtle anatomical injury to their genitalia. Visible symptoms of sexual assault can be lacking or inconspicuous. Symptoms or signs of sexually transmitted infection can also be lacking in at least one third of affected children and can differ based on the severity of the condition [11].

Physicians should make fair attempts of excluding non-sexual transmitting and to clarify the probability of transmission and also the extent of confidence of sexual transmission to child welfare staff. The chance for the child to become infected at the time of birth can be as great as 70% [26]. Positive STI results, particularly in pre-pubertal children, may provide near-diagnostic assurance that sexual assault has happened. A positive STI test for just any organism in a pre-pubertal child must be verified by collecting a second specimen wherever practicable. A second specimen must be obtained in order to initiating of infection therapy [27].

### CONCLUSION AND RECOMMENDATIONS:

Sexually transmitted infections can be transmitted to children by sexual abuse. Any child with diagnosed STI must be assessed for sexual assault. Prevalence of STI, like *C. trachomatis* and *N. Gonorrhea*, which is low in children tested for potential sexual assault, has an effect on their favorable predictive value. Physicians need to be aware of the most prevalent sexually transmitted infections. There is a strong need for extensive and ongoing diagnostic testing trials in community, particularly when new tests are implemented.

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