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PLAYFUL PUPPETS, SERIOUS LESSONS: TEACHING GRAY TOUCH

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ABSTRACT

Background: Child Sexual Abuse (CSA) threatens children's overall development, making education on 'gray touch' vital for prevention. This study assessed the effectiveness of puppet shows in improving primary school children's knowledge of gray touch. **Objectives:** To evaluate pre- and post-test knowledge levels in both treatment and comparison groups, determine the effectiveness of puppet show teaching, and identify associations between knowledge scores and socio-demographic factors. **Materials & Methods:** A quasi-experimental, non-randomized comparison group design was adopted, involving 200 children from two government primary schools in Chennai. The treatment group (Koladi School) received a puppet show intervention, while the comparison group (Maduravoyal School) did not. Data were collected using a validated structured questionnaire, and statistical analysis was conducted using descriptive statistics, paired and unpaired t-tests, and chi-square tests. **Results:** showed a significant improvement in knowledge levels in the treatment group post-intervention, with 49% of children demonstrating good knowledge and 47% average knowledge about gray touch. The comparison group showed minimal change, and the chi-square value of 74.389 was statistically significant at $p<0.001$. Demographic factors such as age, class level, and number of siblings were found to be significantly associated with knowledge scores in the treatment group. **Conclusion & Recommendation:** The study concludes that puppet shows are an effective, engaging, and age-appropriate method for teaching children about personal safety and identifying inappropriate touches. Future research should include larger, diverse samples, assess long-term effects, and explore digital tools such as augmented reality and AI-based storytelling to enhance learning and support integration into school curricula.

Introduction

Childhood is a crucial stage of human development marked by emotional, physical, and psychological growth. It is a phase that ideally encompasses love, care, safety, and nurturing environments. [1] However, for many children worldwide, this stage is disrupted by abuse and neglect, which can severely impact their well-being and future development. Among the various forms of abuse, Child Sexual Abuse (CSA) is one of the most alarming and damaging. The World Health Organization (WHO) estimates that nearly one billion children globally experience physical, emotional, or sexual violence each year. [2] Such traumatic experiences not only threaten a child's immediate safety but also lead to long-term consequences such as depression, anxiety, post-traumatic stress disorder (PTSD), substance dependence, and difficulties in building healthy relationships. [3]

In India, the vulnerability of children to inappropriate experiences has become an increasing concern, with numerous cases reported both within and outside the family environment. Many young individuals remain unaware that what they have encountered is unacceptable, largely because they lack adequate understanding of bodily autonomy and personal boundaries. [5] Studies indicate that both boys and girls are susceptible, though girls are disproportionately affected. [6] Alarmingly, in a significant number of instances, those responsible are familiar figures such as relatives, neighbors, teachers, or family acquaintances. Despite rising awareness, the subject continues to be surrounded by silence in many households and schools, leaving children without the confidence or opportunity to seek help. [7] One of the most effective preventive approaches is to empower children with the ability to distinguish between safe and unsafe forms of touch. A reassuring touch fosters feelings of love, care, and security, whereas an unsettling touch creates confusion, fear, and discomfort.[8] Unfortunately, many children struggle to recognize these differences, particularly when the misconduct is perpetrated by trusted adults. The lack of open dialogue between parents, teachers, and children perpetuates this silence, allowing

such experiences to remain hidden and unaddressed.[9]

In recent years, interactive and child-friendly educational methods such as puppet shows and role-play have gained prominence as effective strategies for teaching children about personal safety. Unlike conventional didactic approaches, these participatory techniques actively engage children, fostering not only knowledge acquisition but also the confidence to disclose uncomfortable experiences. Evidence from India highlights significant improvements in children's understanding of good and bad touch after such interventions, yet large-scale integration of these programs within school curricula and community settings remains limited. Notably, Inanci et al. found that while 21.5% of primary care physicians had encountered at least one case of child abuse in their practice, nearly half refrained from reporting or seeking advice revealing a critical disconnect between awareness and action.[15]. The novelty of focusing on interactive educational models like Puppet Show lies in addressing this gap from the ground up: empowering children themselves as the first line of protection. By equipping them with age-appropriate knowledge of body autonomy, personal boundaries, and pathways for seeking help, such initiatives go beyond awareness to actively cultivate resilience, safer environments, and a long-term cultural shift that breaks the silence around child abuse.

Objectives

The study aims to assess the pre-test and post-test levels of knowledge regarding gray touch among primary school children in both the treatment and comparison groups. It further seeks to evaluate the effectiveness of a puppet show as an educational tool in improving knowledge about gray touch among these groups. Additionally, the study intends to identify the association between the pre-test and post-test knowledge scores on gray touch and selected sociodemographic variables of the children.

Hypotheses

RH_1: There is a significant difference in pre and post-test scores of knowledges on gray touch among primary school children in treatment group than comparison group.

RH_2: There is a significant increase in knowledge in post-test after administration of puppetry teaching on gray touch in treatment group.

RH_3: There is a significant association of pre and post-test knowledge on gray touch in treatment and comparison group with demographic variables.

Methodology

The present study employed a quasi-experimental non-randomized comparison group design to evaluate the effectiveness of a puppet show on knowledge regarding gray touch among primary school children in Chennai. The investigation was conducted from September 19, 2024, to October 10, 2024, during which the entire process of data collection took place. From Koladi Primary School, which had a total strength of 280 students, 100 were selected as the treatment group; this included children from Classes I to V. Similarly, from Maduravoyal Primary School with a total strength of 284 students, 100 were chosen as the comparison group, comprising students from Classes I to V. Exclusion criteria included children who were unwilling to participate, those studying in private schools, and children with mental disabilities**.**

A Non-Probability Purposive Sampling technique was utilized to recruit participants. Data were collected using a structured, validated questionnaire that was meticulously developed following an extensive literature review and expert consultation. The tool incorporated sections on socio-demographic characteristics, knowledge about the gray touch. All instruments were appropriately validated for local use and administered in English. Puppet show was prepared on the following aspects of general information about private parts, Difference between good and bad touch, Safety precautions to prevent bad touch, Whom to Contact in time of emergency, Puppet show using the hand glove doll, Total duration of puppet shows 7 min, Subjects of treatment group will be administered puppet show after pre-test, Subjects of comparison group will be administered puppet show after post- test.

The ethical approval was obtained from the Institutional Ethical Committee from ACS Medical College and Hospital. **(Ref no: 1263/2024/IEC/ACSMCH Dt. 05.07.2024)** At Maduravoyal School, the distance from the college to the data collection site was 7 kilometers. At Koladi School, the distance from the college to the treatment group location was 13 kilometers.

To uphold participant confidentiality, response sheets were anonymized. Each participant received a structured questionnaire aimed at assessing knowledge about gray touch. Descriptive statistics, including frequency and percentage, were employed to assess the pre-test and post-test level of knowledge regarding gray touch. To evaluate the effectiveness of Puppet, show Paired 't' test and unpaired "t" test was used and to find out the association between pre and post-test knowledge regarding gray touch among treatment and comparison group Chi square (inferential statistics) is applied.

Result

The study's findings highlighted significant improvements in both knowledge toward the gray touch among primary children after the intervention in the treatment group, 49(49%) had good knowledge, 47(47%) had average knowledge and 4(4%) had poor knowledge regarding Gray Touch whereas in the pre-test of comparison group, 46(46%) had average knowledge, 42(42%) had good knowledge and 12(12%) had poor knowledge regarding gray touch. post-intervention, 46(46%) had good knowledge, 43(43%) had excellent knowledge and 11(11%) had average knowledge regarding Gray Touch, and whereas in the post test of comparison group, 47(47%) had average knowledge, 44(44%) had good knowledge and 9(9%) had poor knowledge regarding gray touch. The calculated chi-square value of 74.389 was statistically significant at p

Discussion

Descriptive and inferential statistics were used to analyze the demographic data. The majority of children in the treatment group (75%) and the comparison group (52%) were aged 9 years. Most were studying in classes IV-V (63% treatment, 81% comparison) and lived in urban areas (78% treatment, 90% comparison). Hindus formed the largest religious group, followed by Christians and Muslims. Most children had one sibling and belonged to nuclear families. Fathers were primarily laborers, while mothers were mostly homemakers. A majority of both groups had prior knowledge about good and bad touch, mainly acquired from school.

The above study findings are supported by Beeman, M., Govindan et al., (2023) conducted an experimental research single group pre-test and post-test design was chosen to assess the efficacy of teaching

initiatives addressing good and bad touch in order to decrease child sexual abuse. 60 school-age youngsters in Visnagar, Gujarat's schools were chosen by Purposive sampling method. kids were taught about good touch and bad touch and the data was collected using structured questionnaire. The study results found that 25(41.6%) of school children were in the age of 9-10 years, Majority 36(60%) of them were female and 24(40%) of them were male. 25(41.66%) of school children mother's education from high secondary,14(23.33%) of school children from 3rd-5th class of study and 28 (46.66%) of schoolchildren are parents of one child, 37(61.66%) school children to joint family, 27(45%) of school children living in rural area. The correlation between demographic factors and knowledge score reveals a strong relationship between age, gender, religion, and mother status, class of study, monthly income and number of children, family structure, and place of living.[9]

In the pre-test, 49% of children in the treatment group had good knowledge, 47% had average knowledge, and 4% had poor knowledge regarding gray touch. In the comparison group, 46% had average knowledge, 42% had good knowledge, and 12% had poor knowledge. The calculated chi-square value of 4.549 was not statistically significant at $p<0.05$, indicating no significant difference between the groups at baseline. (**Table 1**) the post-test, 46% of children in the treatment group had good knowledge, 43% had excellent knowledge, and 11% had average knowledge. In contrast, the comparison group showed 47% with average knowledge, 44% with good knowledge, and 9% with poor knowledge. The calculated chi-square value of 74.389 was statistically significant at $p<0.001$, indicating that the puppet shows intervention effectively improved knowledge among children in the treatment group compared to the comparison group. (**Table 2**)

These findings are supported by Shaiji, M. J., Kumari, A., Kaur, A., et al. (2021), who reported that the mean post-test knowledge score (20.06) was significantly higher than the mean pre-test score (10.24) among the experimental group [$t(49) = 2.01$, $p<0.05$]. Their study also found significant associations between students' knowledge of sexual abuse and variables such as mother's occupation ($\chi^2=7.02$, $p<0.05$) and prior awareness ($\chi^2=7.28$, $p<0.05$). Overall, student knowledge regarding awareness of

sexual abuse showed marked improvement.[10]]

Pre-test mean score of knowledge among primary school children in the treatment group was 7.50±2.23 and the post-test mean score was 11.48±2.77. The mean difference score was 3.98. The calculated paired 't' test value of t= 12.728 was found to be statistically significant at p<0.001 level which clearly infers that there was improvement in the level of knowledge after the Puppet show among primary school children in the treatment group.

Pre-test mean score of knowledge in the comparison group among primary school children was 6.92±2.73 and the post-test mean score was 7.13±2.49. The mean difference score was 0.21. The calculated paired 't' test value of t=0.897 was not found to be statistically significant which clearly infers that there was no significant improvement in the level of knowledge among primary school children in the comparison group who had undergone normal daily routines.(**Table 3**) This above finding was supported by Fernandes, J. S., & George, A. (2019) to find effectiveness of puppet show as a teaching method in improving the knowledge on child safety, among 5th and 6th standard students with different learning styles. In the pre-test, majority of the participants (76.6%) had poor knowledge and 23.4% had satisfactory knowledge and none of them had excellent or good knowledge on child safety. In the post-test 36.9% had excellent knowledge and 38.7% had good knowledge, 24.3% had satisfactory knowledge and none had poor knowledge. Puppet show was effective in increasing the knowledge level on child safety (Z=-9.153, P=0.001).[11]

To find out association of pre-test knowledge regarding gray touch among treatment and comparison group with socio demographic variables.

The demographic variables age (X2=16.729, p=0.002) and standard (X2=X2=14.459, p=0.006) had statistically significant association with pre-test level of knowledge regarding gray touch among primary school children at p<0.01 level in the treatment group. The demographic variable number of siblings (X2=9.542, p=0.049) had statistically significant association with pre-test level of knowledge regarding gray touch among primary school children at p<0.05 level and the other demographic variables had not shown statistically significant

association with pre-test level of knowledge regarding gray touch among primary school children at $p<0.05$ level in the treatment group. The demographic variable standard ($X2=9.643$, $p=0.047$) had shown statistically significant association with pre-test level of knowledge regarding gray touch among primary school children at $p<0.05$ level in the comparison group and the other demographic variables had not shown statistically significant association with pre-test level of knowledge regarding gray touch among primary school children at $p<0.05$ level in the comparison group

To find out association between post-test knowledge regarding gray touch among treatment and comparison group with selected socio demographic variables.

The demographic variables standard had statistically significant association with post-test level of knowledge regarding gray touch among primary school children at $p<0.05$ level in the treatment group and the other demographic variables had not shown statistically significant association with post-test level of knowledge regarding gray touch among primary school children at $p<0.05$ level in the treatment group. The demographic variables had not shown statistically significant association with post-test level of knowledge regarding gray touch among primary school children at $p<0.05$ level in the comparison group.

Several studies have demonstrated a significant association between children's knowledge of good and bad touch and various sociodemographic variables. Khan, Mohan, and Sharma (2021) reported a strong link between knowledge levels and factors such as religion and number of siblings ($p < 0.05$).[12] Similarly, Patidar and Vaishnav (2019) highlighted that in their sample, most children were 12 years old (60.66%), Hindu (98%), and studying in 7th class (50.66%). The majority belonged to joint families (55.33%), lived in urban areas (84%), and came from families with a monthly income above ₹15,000 (44.66%). While 50.66% of the children lacked prior knowledge of good and bad touch, mainly sourced from mass media (28%), a significant improvement was observed in post-test knowledge scores (17.14 ± 1.39) compared to pre-test scores (8.1 ± 1.36), with a highly significant t-value (180.99, $p < 0.05$).[13]

Findings from other studies corroborate these results. Abujamand et al. (2012) reported significant associations

between knowledge and age, while a study conducted in Jodhpur (2021) revealed associations with religion, number of siblings, and marital disharmony. [14] In addition, Sharma, Sahu, and Jaiswal (2023) identified gender, class of study, and family type as key factors influencing pre-test knowledge scores. Beeman, Govindan, et al. (2023) further emphasized that demographic variables such as age, gender, religion, mother's education, class, income, number of children, family structure, and residence were strongly associated with knowledge levels. In a similar vein, Purohit and Shah (2022) reported significant associations with place of residence ($p = 0.070$) and mother's occupation ($p = 0.006$).

Thus, all three research hypotheses were accepted, confirming that puppet shows significantly improved knowledge regarding gray touch and that demographic variables influenced children's knowledge levels.

Conclusion & Recommendation

The present study assessed the impact of a puppet show on primary school children's knowledge regarding gray touch in selected schools in Chennai. The findings revealed a significant improvement in the students' knowledge following the puppet show intervention. The study concluded that the introduction of puppet shows effectively enhanced primary school children's understanding of gray touch Future research can focus on expanding the scope by conducting similar studies with larger sample sizes to enhance the generalizability of the results. Comparative studies can also be undertaken to evaluate the effectiveness of different teaching methodologies in improving children's knowledge and behavior regarding personal safety. Additionally, long-term studies are recommended to assess the sustained impact of educational interventions over time. Exploring the potential of digital puppet shows or interactive puppet applications may offer scalable and accessible solutions for wider reach. It is also essential to develop educational content tailored for children with disabilities, including those with visual and hearing impairments, to ensure inclusivity. Advocating for the integration of such educational programs into the school curriculum as mandatory sessions can further strengthen the initiative. Furthermore, the use of advanced technologies such as AI-driven puppet characters and augmented reality (AR)-enhanced storytelling can provide

innovative and engaging learning experiences for children.

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Conflict of Interest

The author(s) declare that there is no conflict of interest regarding the publication of this research work.

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Table 1: Frequency and percentage distribution of pre-test level of knowledge regarding Gray Touch among the primary school children in the treatment and comparison group.

Level of Knowledge	Treatment Group		Comparison Group		Chi-Square Test & p-value
	F	%	F	%	
Poor knowledge (<4)	4	4.0	12	12.0	χ^2=4.549 d.f=2 p=0.103 N. S
Average (4 – 7)	47	47.0	46	46.0	
Good (8 – 12)	49	49.0	42	42.0	

Table 2: Frequency and percentage distribution of post-test level of knowledge regarding Gray touch among the primary school children in the treatment and comparison group.

Level of Knowledge	Treatment Group		Comparison Group		Chi-Square Test & p-value
	F	%	F	%	
Poor knowledge (<4)	0	0	9	9.0	χ^2=74.389 d.f=3 p=0.0001 S***
Average (4 – 7)	11	11.0	47	47.0	
Good (8 – 12)	46	46.0	44	44.0	
Excellent (13 – 15)	43	43.0	0	0	

Table :3 Effectiveness of Puppet Show regarding knowledge on Gray touch among primary school children in the Treatment and comparison group.

Know ledge	Treatment Group			Comparison Group			Mean Difference Score	Student Independent 't' test value
	Mean	S.D	Median	Mean	S.D	Median		
Pre test	7.50	2.23	7.0	6.92	2.73	7.0	0.58	t = 1.643 p=0.102 N.S

Post Test	11.48	2.77	12.0	7.13	2.49	7.0	**4.35**	**t = 11.667 p=0.0001 S*** **

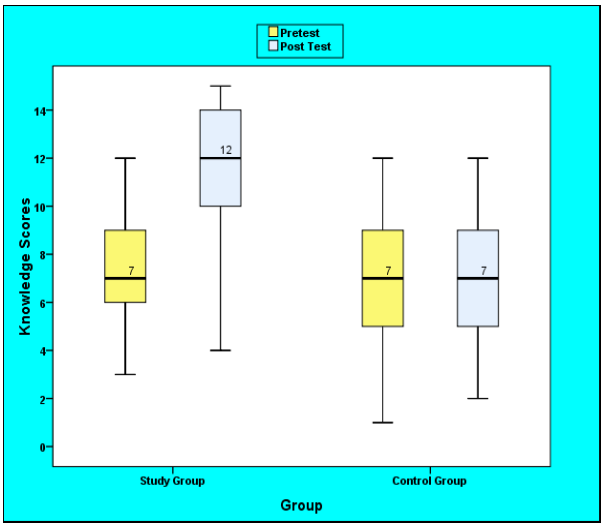

Fig 1: Boxplot showing the comparison of pretest and post-test knowledge scores regarding Gray touch among the primary school children between the treatment and control group