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KNOWLEDGE AND AWARENESS OF CHILD ABUSE AND NEGLECT AMONG DENTISTS - A SURVEY

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ABSTRACT

Child Abuse is state of emotional, physical, economic and sexual maltreatment met out to be a person below age of 18 and is a globally prevalent phenomenon. However in India there has been no understanding of extent, magnitude and trends of the problem. In view of the high proportion of oral facial injuries seen in victims of child abuse, Dentists are in a strategic position to recognize and report suspected cases. A Cross-sectional survey was undertaken to assess the knowledge and Attitude of Dentists regarding Child Abuse and Neglect, and to identify the barriers in Child Abuse and Neglect. A questionnaire of 21 questions was created and entered in the online survey creator 'Google Forms' and shared among the each dentists population of 100 dentists individually and privately and the data collected were subjected to Statistical analysis using SPSS software. Statistical tests used were descriptive statistics and chi square tests. P value less than 0.05 was considered statistically significant. Confidence level was set at 90%. Overall responses to the questions was 95%. Significant difference between MDS and BDS Dentists in knowledge and awareness of child abuse and neglect noted, with the BDS graduated dentists showing more knowledge and awareness. Results of this study suggest that Dentists need an effective education and awareness campaign to increase their knowledge and awareness of all aspects of CAN.

Keywords: *Child Abuse and Neglect, Dentist knowledge, Reporting, Education, Awareness.*

I. INTRODUCTION:

Child Abuse and Neglect (CAN) has been defined by World Health Organisation as "Every kind of physical, sexual, emotional abuse, neglect or negligent treatment commercial or other exploitation resulting in acting

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or potential harm to child health, survival, development or dignity in the context of a relationship of responsibility [1]. Abuse can be physical, sexual, psychological and economic neglect can be defined as the intentional failure to provide necessary medical treatment and health protection [2]. American Academy and Pediatric dentistry (AAPD) defined dental neglect as wilful failure of a parent or guardian to seek and follow through with whatever treatment is ensured to the level of oral health essential for adequate chewing functions and freedom from pain and infection [3]. International studies emphasize the role of dental practitioners in detecting Child abuse and Neglect. It has been reported that orofacial trauma is present in approximately 50 to 75 percent of all reported cases of physical child abuse.Therefore, dental health care providers are most likely to be the first to recognize the evidence of physical abuse. Different nationwide studies reported a very low percentage of dentists' participation in reporting suspected cases of CAN.

Based on the regular contact that dental practitioners have with children and their families, these health professionals are in a favorable position to observe abnormal child–parent behavior, and to identify and report suspected cases of Child abuse and Neglect. It is also possible to diagnose child dental neglect, as well as neglect in general, upon dental examination [4]. In 1992, Da Fonseca et al. reported that ''abusive caretakers rarely take the child to the same physician, but they are not cautious about dentists''. This observation further supports the importance of dental evaluations and the awareness of den- tal practitioners regarding Child abuse and Neglect [5].

WHO estimated that almost 53,000 children died worldwide in 2002 from homicide. In examining the concerns of US dentists over reporting suspected cases of child abuse, Malecz found the most common reason for not reporting were uncertainty about the diagnosis, fear of involvement in litigation, lack of familiarity with signs and symptoms and possible effects on dentist's practice [6]. In 1979, Blain et al, concluded that if dentists were trained and more confident in their ability to recognised child abuse more cases would be diagnosed and

reported. Although their subject is vital most of the professionals still ignore correct attitudes toward suspicious cases of abuse [7].

Thus the under mentioned study was stipulated to analyse the level of knowledge and attitude among dental practitioners regarding child abuse to identify the level of knowledge in Child abuse and Neglectand to access the need for associated training. Previously our team had conducted original studies [8-14] and surveys [15-22] over the past 5 years. Now we are increasing more focus on various epidemiology surveys. The idea for this survey stemmed from the interest in our community.

II. MATERIALS AND METHODS:

A Cross-Sectional survey was conducted in 2020 among the dentists of chennai, about the awareness of Child Abuse and Neglect. Approval was taken from the Institutional Review board. The sampling techniques used was convenience sampling. A questionnaire of 21 questions including Demographic information and awareness questions such as multiple choices, dichotomous (Yes/No), True/False was created and entered in online survey creator 'Google Forms' and shared among the each dentists of population of 100 dentists individually and privately

and the data collected were subjected to Statistical analysis using SPSS software. Data was represented in the form of Bar graphs and Pie charts. List of dependent variables are knowledge in Child Abuse. List of Independent variables are sex and highest educational qualification. Statistical analysis was done by descriptive statistics to summarize the demographic data and chi square test to analyze survey data. P value less than 0.05 was considered statistically significant. Confidence level was set at 90%.

III. RESULTS AND DISCUSSION:

Questionnaire responses were tabulated (Table 1) and percent frequency distributions for response to each item were computed. There were 100 responses to each questionnaire yielding a response rate of 100%. Demographics of the study participants revealed that out of general dentists 60.6% male and 39.4% female. Nearly 42.9% of people are 5 to 10 years old, 34.7% of 5 and 22.4% are more than 10 years old (Figure 1-2).The study population included 65.7% of BDS dentists and 34.3% of MDS dentists (Figure 3). Dentist's experience in years which were about, 34.7% of the participants had less than 5 years of experiences, 42.9% of the participants had 5-10 years of experiences, 22.4% of the participants had more than 10 years of experiences (Figure 4). 96% were able to identify the child abuse and neglect and aware of it on the other hand 4% were not aware of CAN. (Figure 5). 60% of BDS dentists responded Yes to identify the CAN. (Figure 6) Chi square analysis on comparing the educational level of dentists showed p=0.347 indicating statistically insignificant..76% of respondents saw suspicious cases of physical abuse among child patients and 24% did not have any experience in these cases (Figure 7). 46% of the BDS dentists responded Yes (Figure8). Chi square analysis on comparing the educational level of dentists showed p=0.051 indicating statistically insignificant.

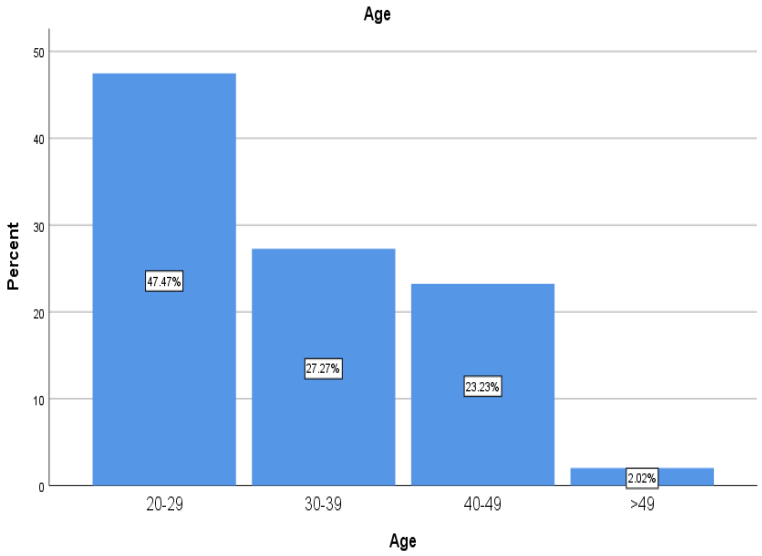

Figure 1: Bar graph Showing Age groups of the Study participants. Majority were from 20-29 age group

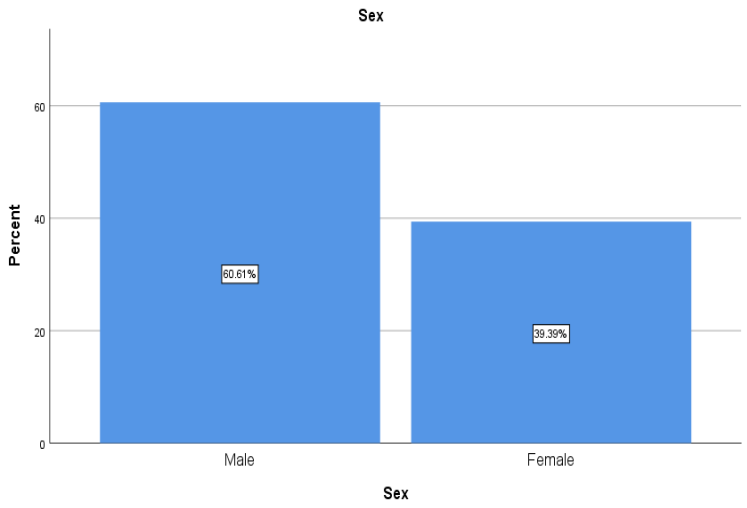

Figure 2: Bar graph Showing Gender of the Study participants. Majority were male participants.

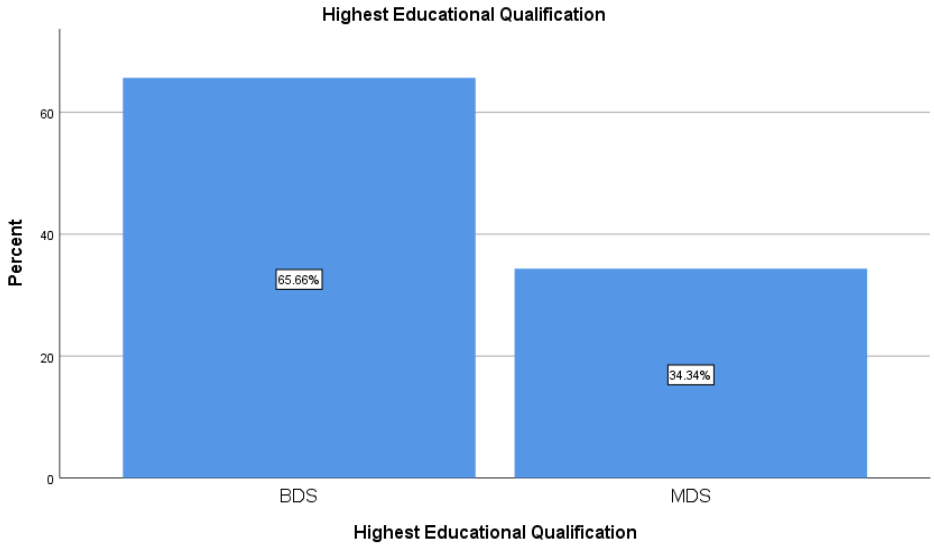

Figure 3: Bar graph Showing the Highest Educational Qualification of the Dentists. Majority of participants were BDS level educated dentists

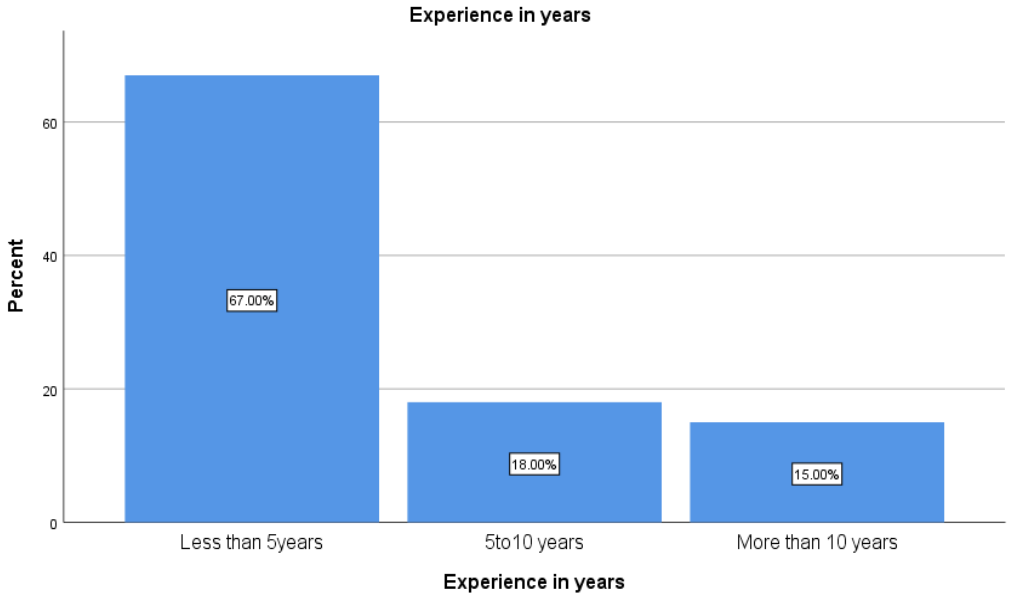

Figure 4: Bar graph Showing the Dentists Experience in years. Majority of the participants had less than 5 years of experience

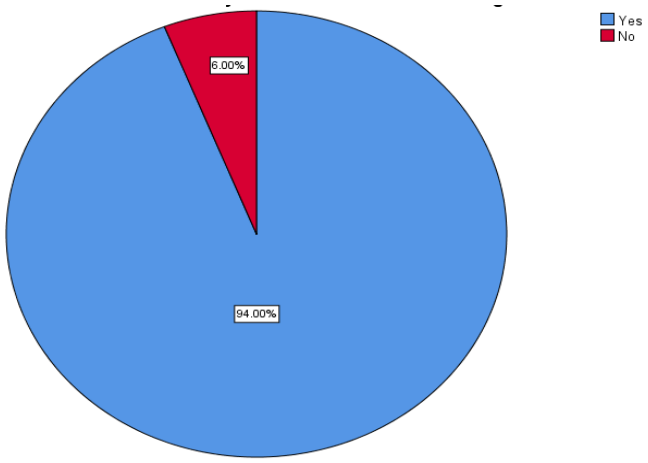

Figure 5 - Pie chart representing the percentage distribution of awareness on child abuse and neglect. Majority of participants 94% answered yes (blue) and 6% answered no (red).

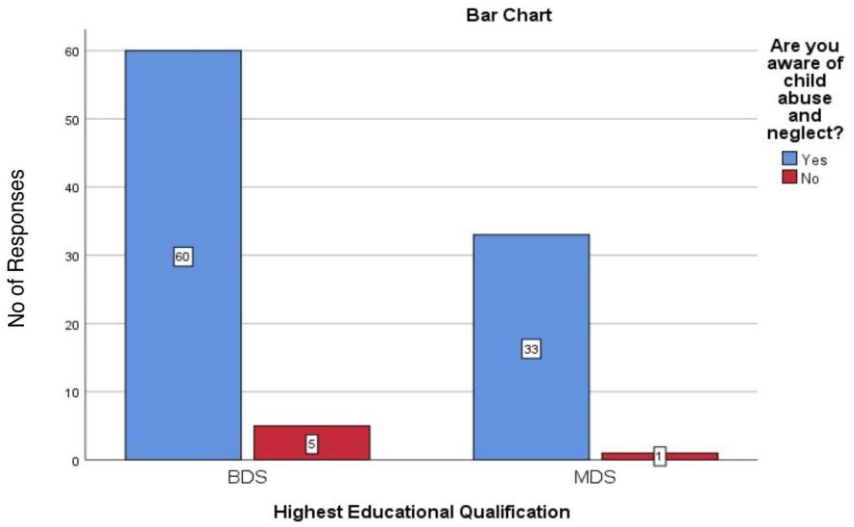

Figure 6- The Bar graphs shows association of different education levels of dentists with respect to Awareness on child abuse and neglect.. X axis represents different education levels and y axis represents the number of dentists who responded for Yes(blue) and No(red). More BDS level educated dentists (60) responded for having awareness on child abuse and neglect than MDS dentists, however comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.347 (p value >0.05, indicating statistically not significant).

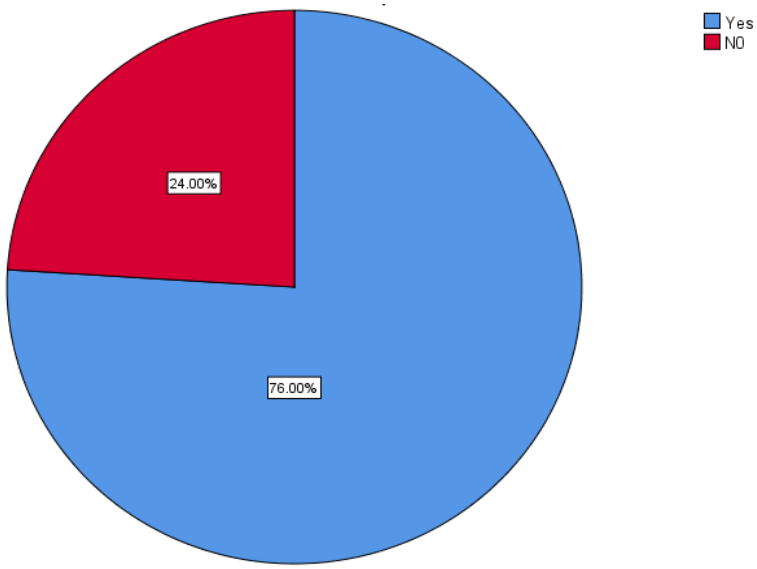

Figure 7: Pie chart representing the percentage distribution of knowledge on suspicious cases on CAN. Majority of participants 76% answered yes (blue) and 24% (red) answered no.

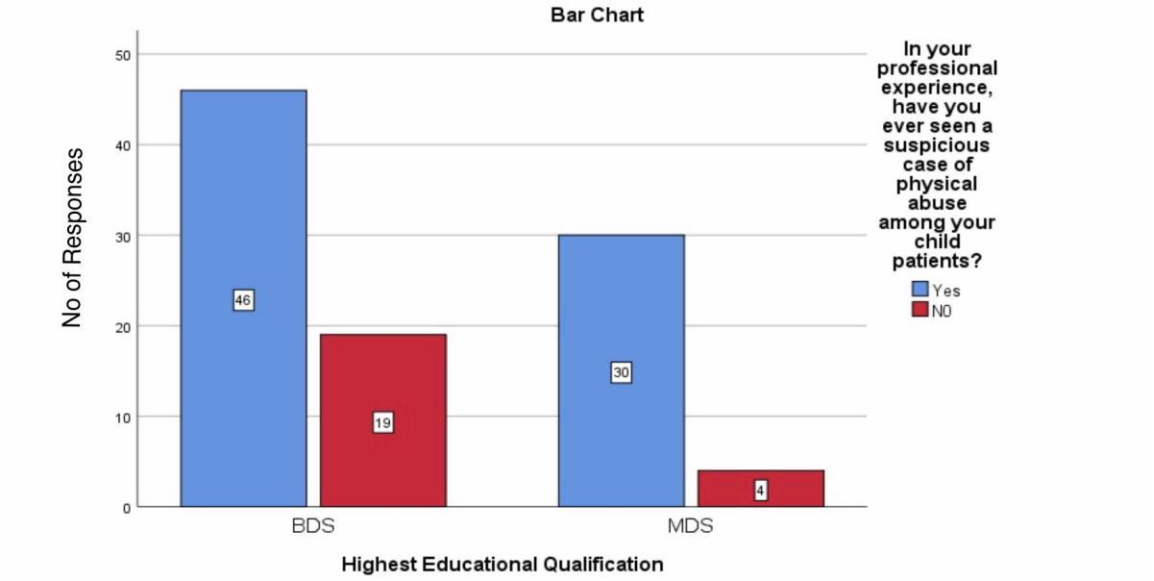

Figure 8 -The Bar Graph shows the association of different education levels of dentists with respect to knowledge of Experience suspicious cases on CAN. X axis represents the different educational level of dentists and Y axis represents the number of dentists who responded for Yes(blue) and No(red). More BDS levels educated dentists (46) responded yes than MDS dentists, However comparison was statistically not significant. Chi square analysis was done and P value was found to be 0.051(p value >0.05 indicating statistically not significant)

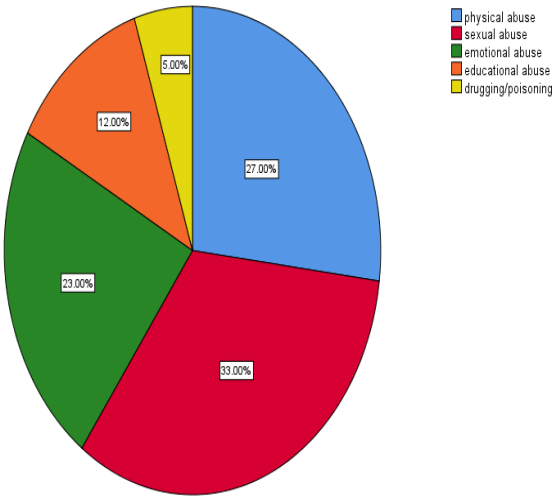

Figure 9: Pie chart representing the percentage distribution of knowledge on child abuse and encountered. Majority of participants 33% answered sexual abuse (red), while 27% answered physical abuse (blue), 23% answered emotional abuse (green), 12 answered emotional abuse (orange) and 5% poisoning and drugging (yellow).

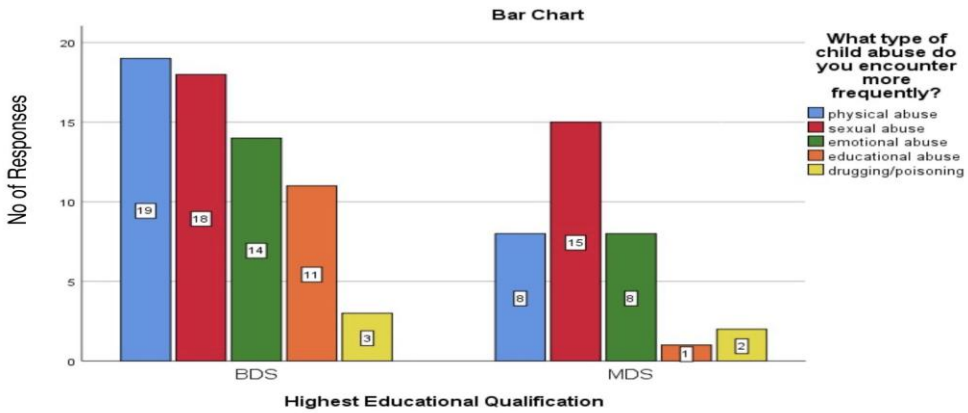

Figure 10- Bar graph shows the association of different educated levels of dentists with respect to the knowledge on Types of Child abuse encountered more frequently .X axis represents the different educated levels of dentists and Y axis represents the number of dentists who responded physical abuse (blue), sexual abuse (red), emotional abuse (green), educational abuse (orange), drugging/poisoning (yellow). More BDS level dentists(19) responded physical abuse as the more frequently encountered child abuse than MDS level dentists, However comparison was not statistically significant. Chi square analysis was done and P value was found to 0.216 (p value >0.05, statistically not significant)

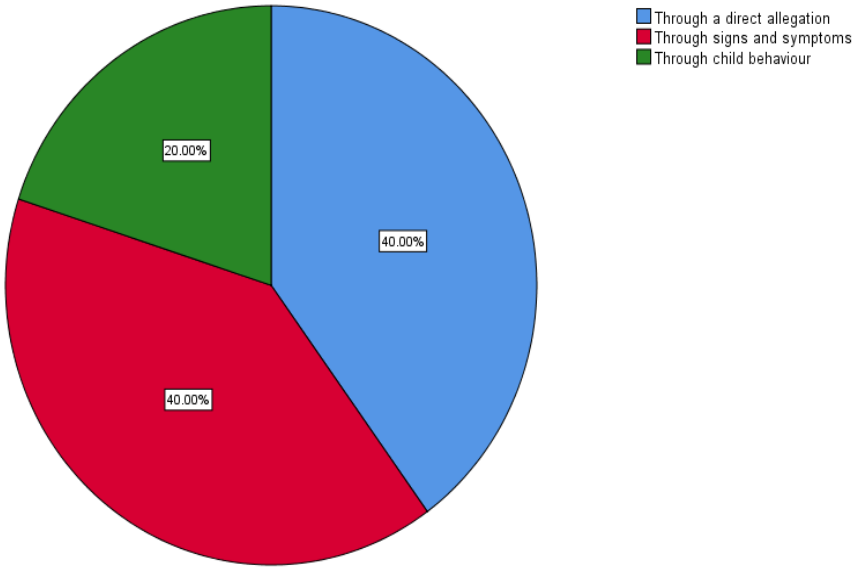

Figure 11: Pie chart representing the percentage distribution of recognition on child abuse and neglect. Majority of participants 40% answered through a direct alligation (blue)and 40% answered through signs and symptoms (red) and 20% answered through child behaviour (green).

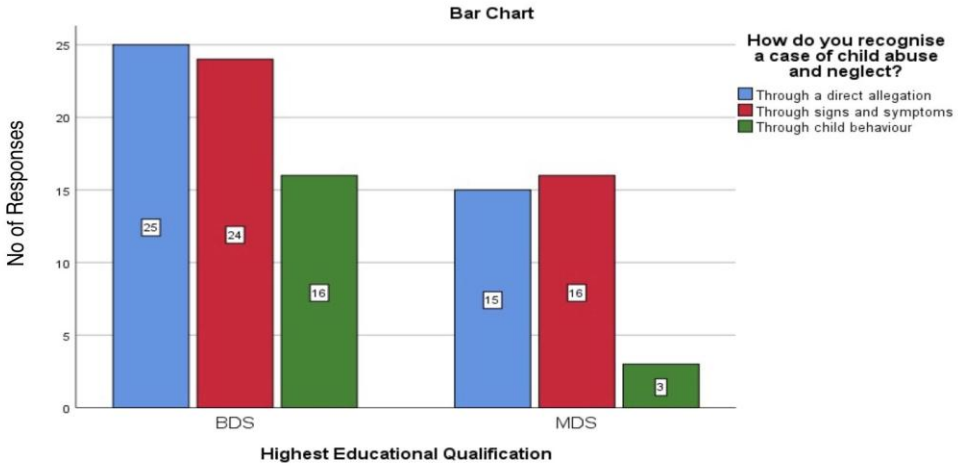

Figure 12 - The Bar graph shows the association of different educated levels of dentists with respect to the knowledge on Recognition of CAN. X axis represents the different educated levels of dentists and Y axis represents the number of dentists who responded to direct allegations (blue), signs and symptoms(red), child behavior(green). More BDS level dentists (25) responded for direct allegation than MDS level dentists to recognise a case of child abuse and neglect, However comparison was not statistically significant. Chi square was done and p value was found to 0.162 (p value >0.05 statistically not significant)

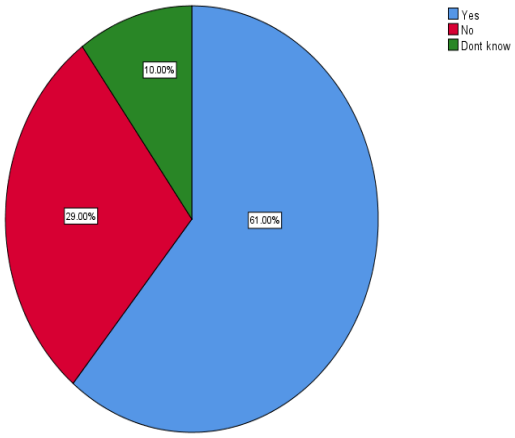

Figure 13: Pie chart representing the percentage distribution of knowledge on socio economic role in CAN. Majority of participants 61% answered yes (blue), 29% answered no (red) and 10% answered didn't know (green).

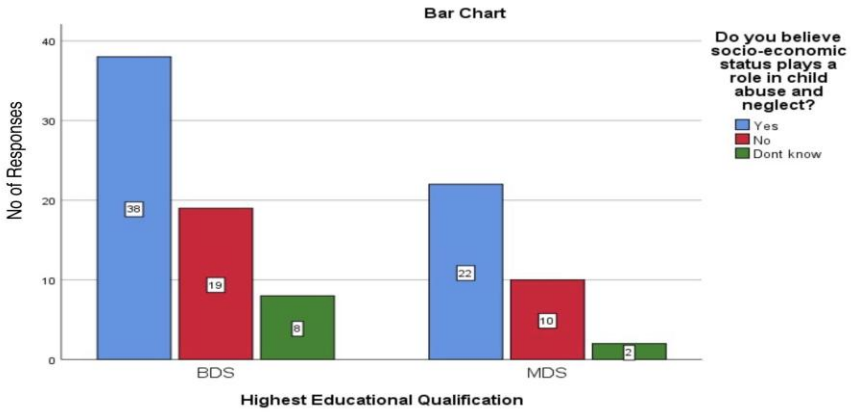

Figure 14 - The Bar graph shows the association of different educated levels of dentists with respect to the knowledge on Socio economic role in CAN. X axis represents the different educated levels of dentists and Y axis represents the number of dentists who responded for Yes(blue), No(red), Don't know(green). More BDS level dentists (38) responded that socio economic status plays a role in the child abuse and neglect than MDS dentists,However comparison was not statistically significant. Chi Square analysis was done and p value was found to be 0.590 (p value >0.05 statistically not significant)

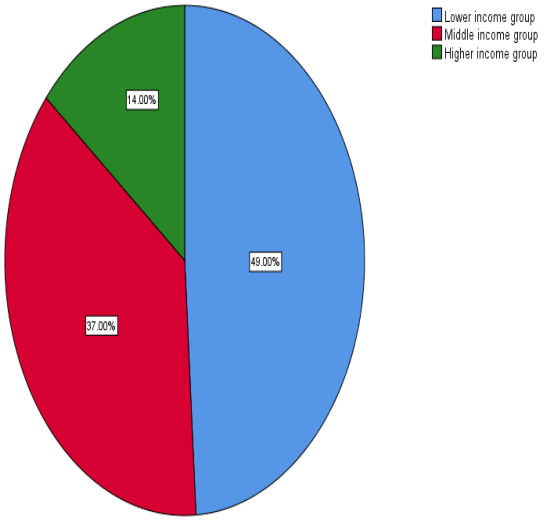

Figure 15: Pie chart representing the percentage distribution of knowledge on socio economic strata on CAN. Majority of participants 49% answered lower income group(blue), 37% answered middle income group (red) and 14% answered higher income group (green).

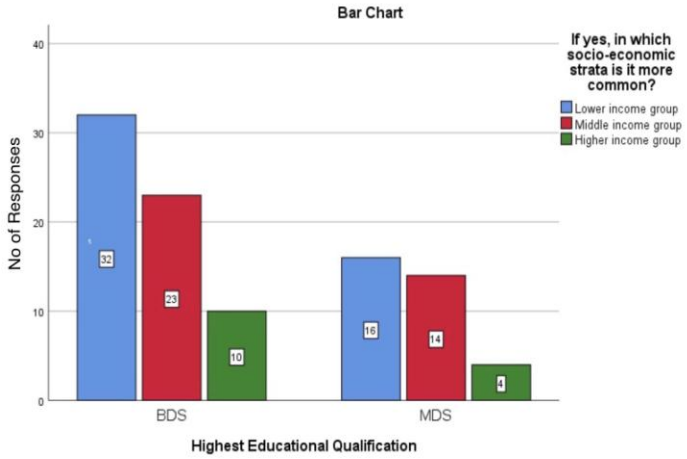

Figure 16 - The Bar graph shows the association of different educated levels of dentists with respect to the knowledge on Role of Socio-economic strata in CAN. X axis represents the different educated levels of dentists and Y axis represents the number of dentists responded for B lower income group(blue), middle income group(red), higher income group(green). More BDS level dentists (32) responded for lower income group as common socio economic starta for child abuse and neglect than MDS dentists,However comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.590 (p value 0.05 statistically not significant)

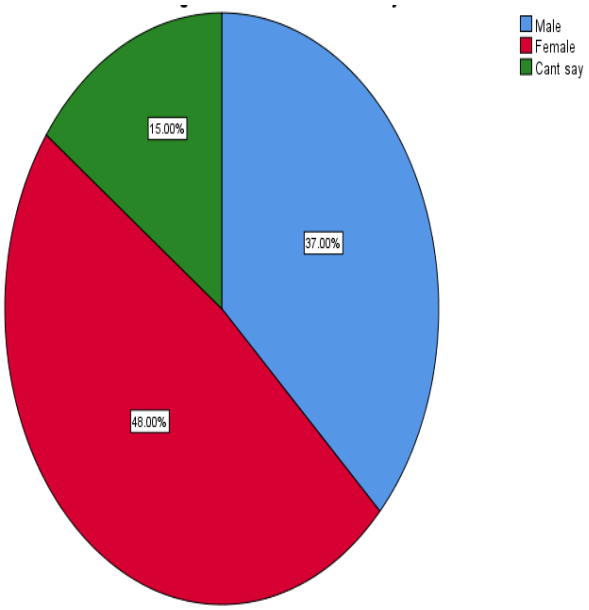

Figure 17: Pie chart representing the percentage distribution of knowledge on child abuse based on gender. Majority of participants 48% answered female (red) , 37% answered male (blue)and 15% answered can't say (green).

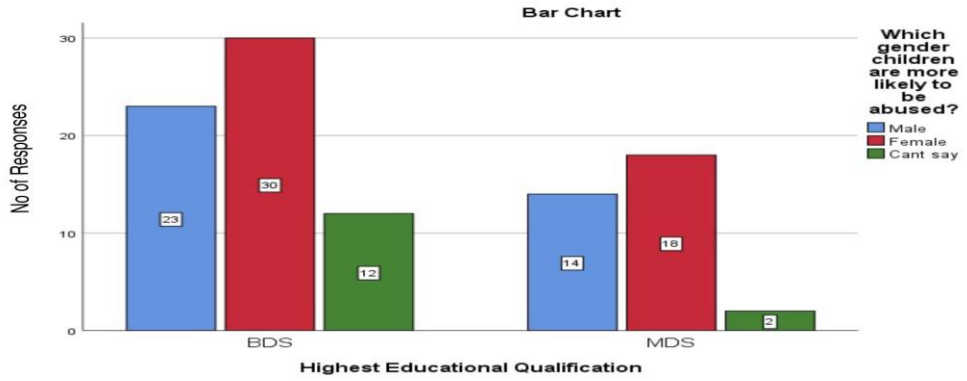

Figure 18 - The Bar graph shows association of different educated levels of dentists with respect to knowledge on Child abuse based on Gender. X axis represents the different educated levels of dentists and Y axis represents the number of dentists responded for male(blue), female (red), can't say (green). More BDS level dentists(30) responded that female children were more likely to be abused than MDS level dentists, However comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.233 (p value >0.05 statistically not significant).

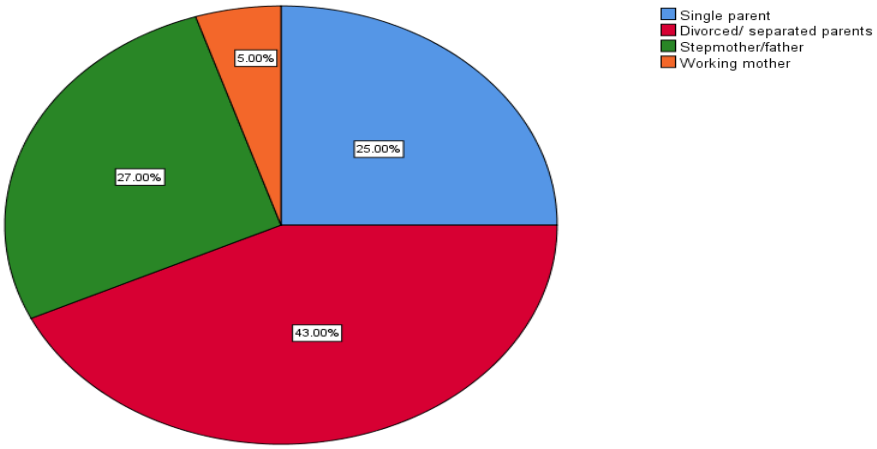

Figure 19: Pie chart representing the percentage distribution of knowledge on types family role in child abuse . Majority of participants 43% answered divorced/separated parents (red), 27% answered stepmother (green), 25% answered single parents (blue) and 5% answered working mothers (orange).

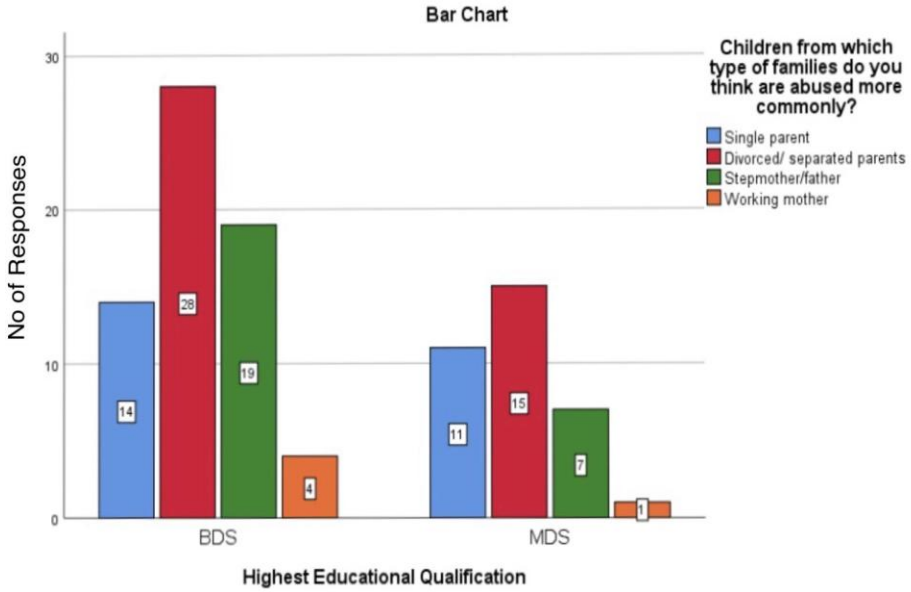

Figure 20 :The Bar graph shows the association of different educated levels of dentists with respect to knowledge on Types of Family role in CAN. X axis represents the different educated levels of dentists and Y axis represents the number of dentists who responded for single parents(blue), divorced/separated parents (red), stepmother/father (green), working mothers (orange). More BDS level dentists (28) responded for divorced/separated parent families in which Child abuse and Neglectwas more frequently seen than MDS level dentists, However comparison was not statistically significant. Chi Square analysis was done and P value was found to be 0.546 (p value > 0.05 statistically not significant).

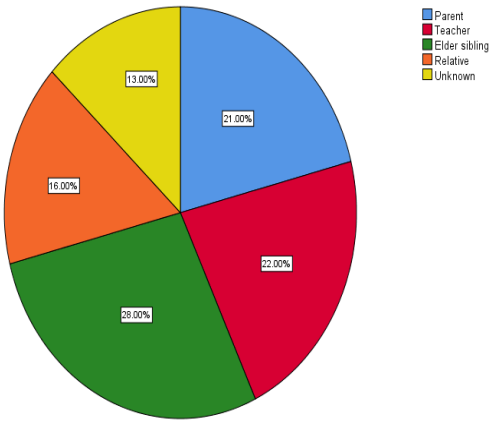

Figure 21: Pie chart representing the percentage distribution of knowledge on common observed abusers on CAN. Majority of participants 28% answered elder siblings (green), 22% answered teachers (red), 21% answered parents (blue), 16% answered relation (orange) and 13% answered unknown (yellow).

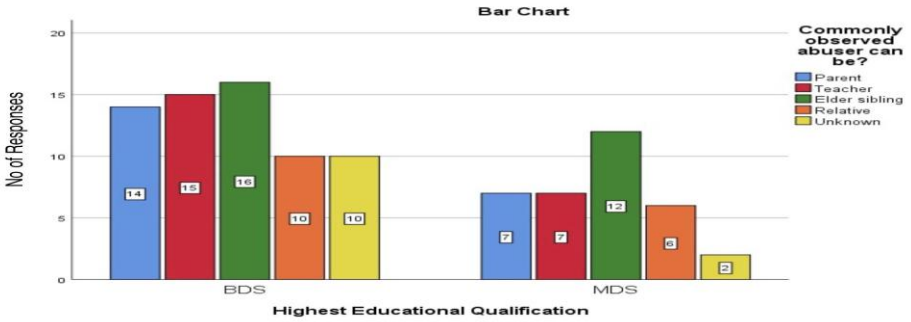

Figure 22:The Bar graph shows the association of different educated levels of dentists with respect to the knowledge on common observed abusers on CAN. X axis represents the different educated levels of dentists and Y axis represents the number of dentists who responded for parents (blue), teacher (red), elder siblings (green), relative (orange), unknown (yellow). More BDS level dentists(16) responded for elder siblings as the more commonly observed abusers than MDS level dentists, However comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.608(p value >0.05 statistically not significant).

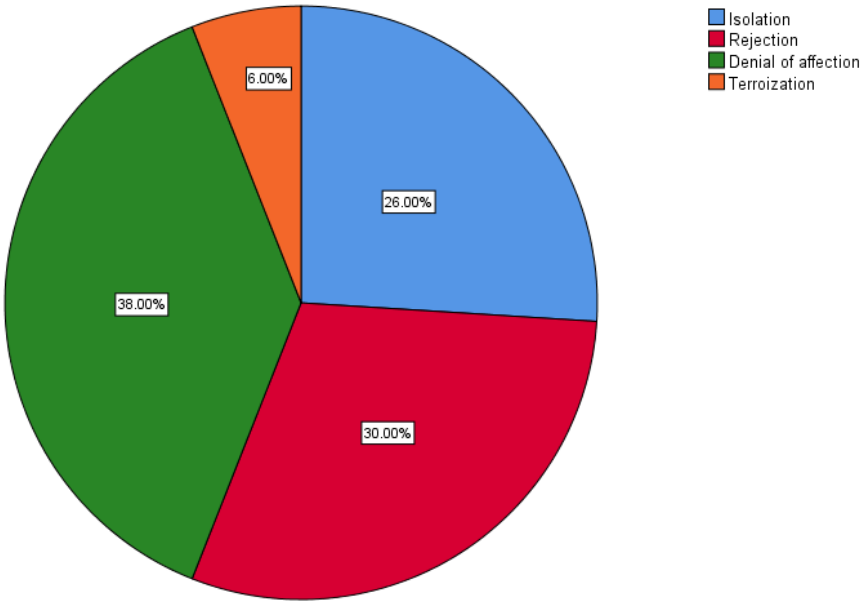

Figure 23: Pie chart representing the percentage distribution of knowledge on emotional abuse on CAN. Majority of participants 38% answered denial of affection (green), 30% answered rejection (red), 26% answered isolation (blue) and 6% answered terrorization (orange).

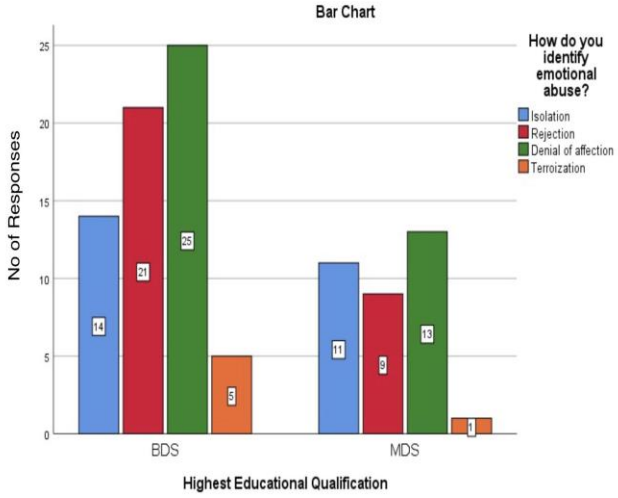

Figure 24:The Bar graph shows the association of different educated levels of dentists with respect to the knowledge on Emotional abuse. X axis represents the different educated levels of dentists and Y axis represents the number of dentists who responded for isolation (blue), rejection (red), denial of affection (green), terrorization (orange). More BDS level dentists (25) responded to denial of affection for identifying emotional abuse than MDS

level dentists, However comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.549 (p value > 0.05 Statistically not significant).

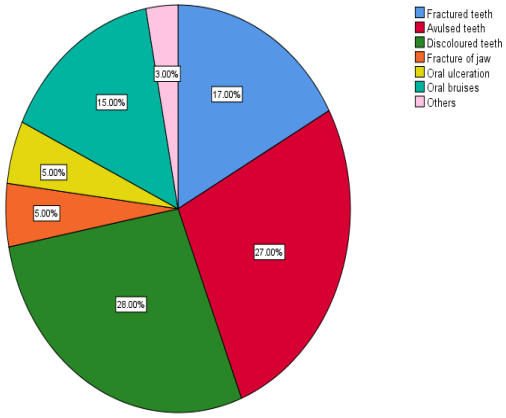

Figure 25: Pie chart representing the percentage distribution of knowledge on Oral injuries encountered on CAN. Majority of participants 28% answered discoloured teeth (green), 27% answered avulsed teeth (red), 17% answered fractured teeth (blue), 15% answered oral bruises (violet), 5% answered fracture of jaw (orange) , 5% answered oral ulceration (yellow) and 3% answered others (pink).

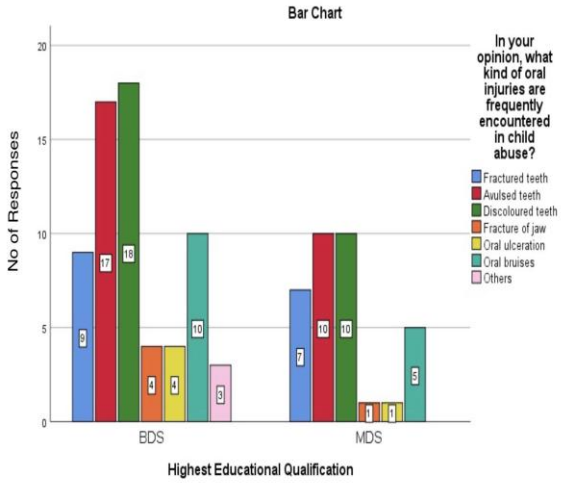

Figure 26:The Bar graph shows the association of different educated levels of dentists with respect to the knowledge on Oral injuries encountered in CAN. X axis represents the different educated levels of dentists and Y axis represents the number of dentists who responded for fractured teeth (blue), avulsed teeth (red), discoloured teeth (green), fracture of jaw (orange), oral ulceration (yellow), oral bruises (violet), others (pink). More BDS level dentists (18) responded for discoloured teeth as the frequently encountered oral injuries in child abuse than MDS level dentists, However comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.780(p value >0.05 statistically not significant)

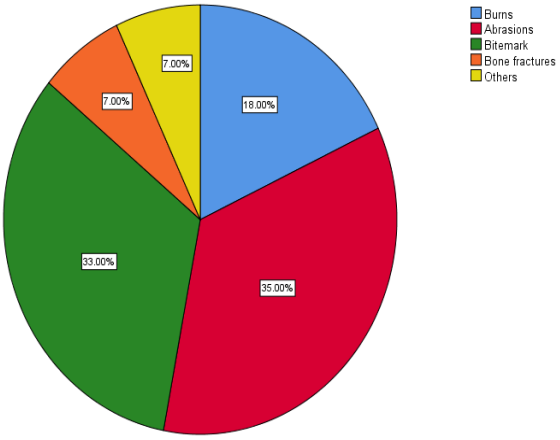

Figure 27: Pie chart representing the percentage distribution of knowledge on body injuries encountered on CAN. Majority of participants 35% answered abrasions (red), 33% answered bite marks (green), 18% burns (blue) , 7% answered bone fractures (orange) and 7% answered others (yellow).

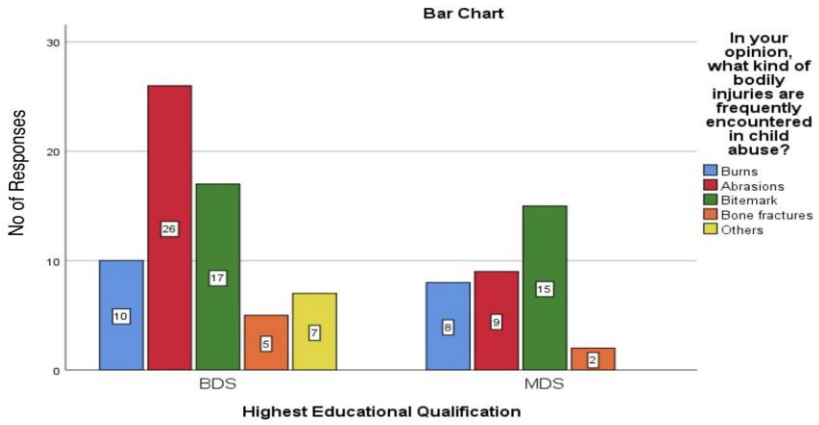

Figure 28 : The Bar graph shows the association of different educated levels of dentists with respect to knowledge on body injuries encountered. X axis represents the different educated levels of dentists and Y axis represents the number of dentists who responded for burns (blue), abrasions (red), bite mark (green), bone fractures (orange), others (others). More BDS level dentists (26) responded that abrasions were the frequently encountered body injuries in child abuse than MDS level dentists, However comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.091(p value >0.05 statistically not significant).

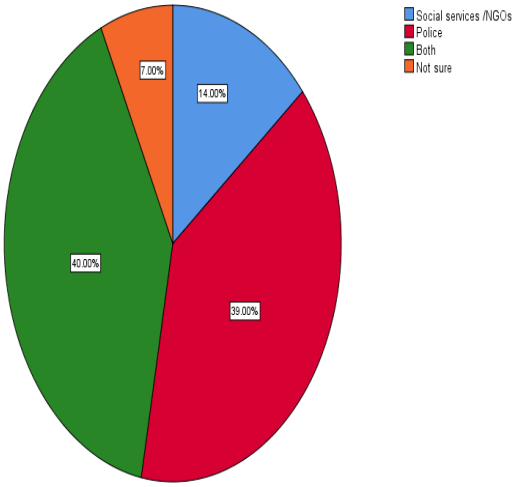

Figure 29: Pie chart representing the percentage distribution of knowledge on reporting suspect on CAN. Majority of participants 40% answered both (green), 39% answered police (red), 14% answered social services (blue) and NGOs and 7% answered not sure (orange).

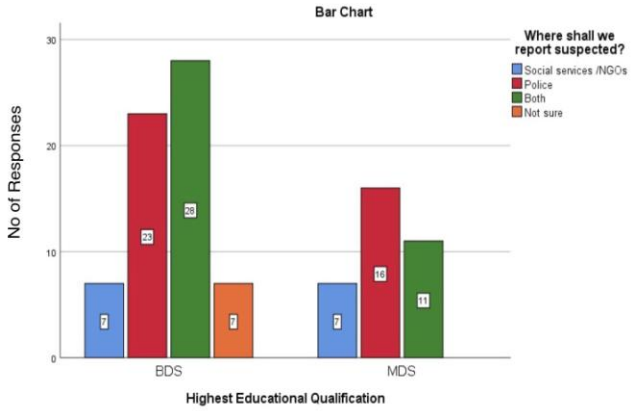

Figure 30: The Bar graph shows the association of different educated levels of dentists with respect to the knowledge on Reporting suspects in CAN. X axis represents the different educated levels of dentists and Y axis represents the number dentists who responded for social service/ NGOs (blue), police (red), both (green), not sure (orange). More BDS level dentists (28) responded to both NGOs and police for reporting the suspected cases than MDS level dentists, However comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.086(p value >0.05 statistically not significant).

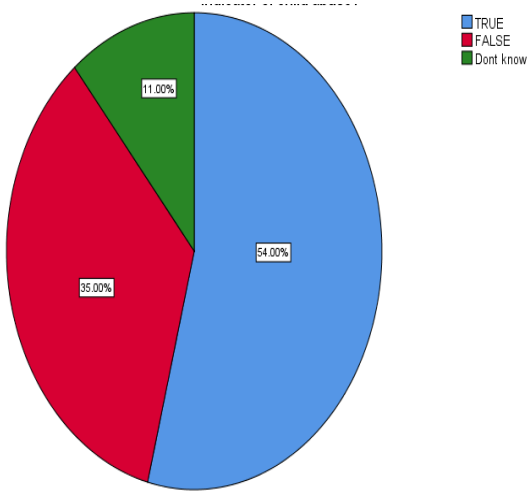

Figure 31: Pie chart representing the percentage distribution of knowledge on bite marks observed in Dental visit investigated as CAN. Majority of participants 54% answered true (blue), 35% answered false (red) and 11% answered didn't know (green).

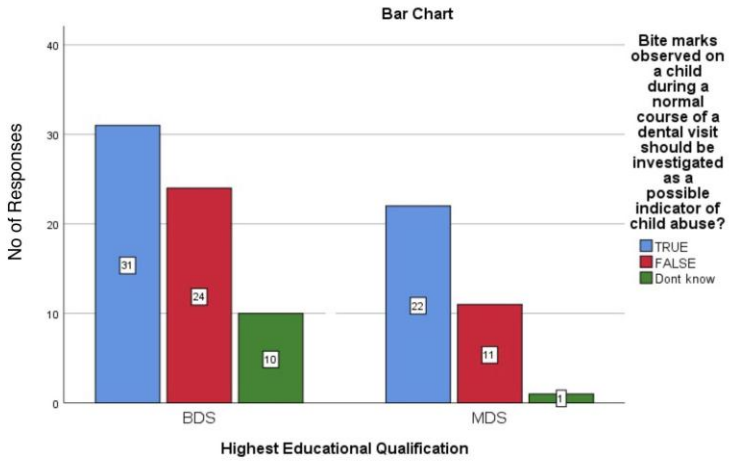

Figure 32: The Bar graph shows the association of different educated levels of dentists with respect to the knowledge on Bite marks observed in Dental visits investigated as CAN. X axis represents the different educated levels of dentists and Y axis represents the number of dentists who responded for true (blue), false (red), and didn't know (green). More BDS level dentists (31) responded true for bite marks observed in dental visits investigated as

Child abuse and Neglect than MDS level dentists, However comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.108 (p value >0.05 statistically not significant).

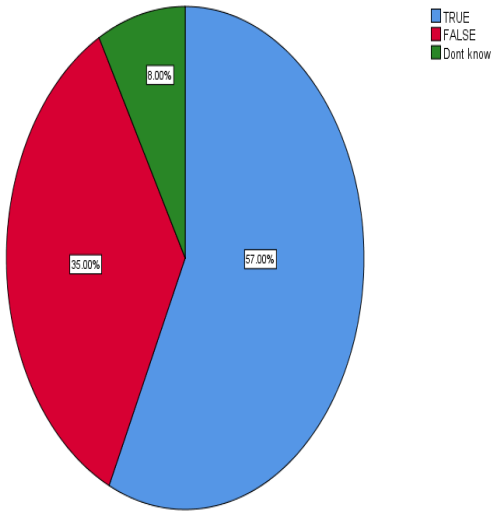

Figure 33: Pie chart representing the percentage distribution of knowledge on oral part on physical neglect. Majority of participants 57% answered true (blue) , 35% answered false (red) and 8% answered didn't know (green).

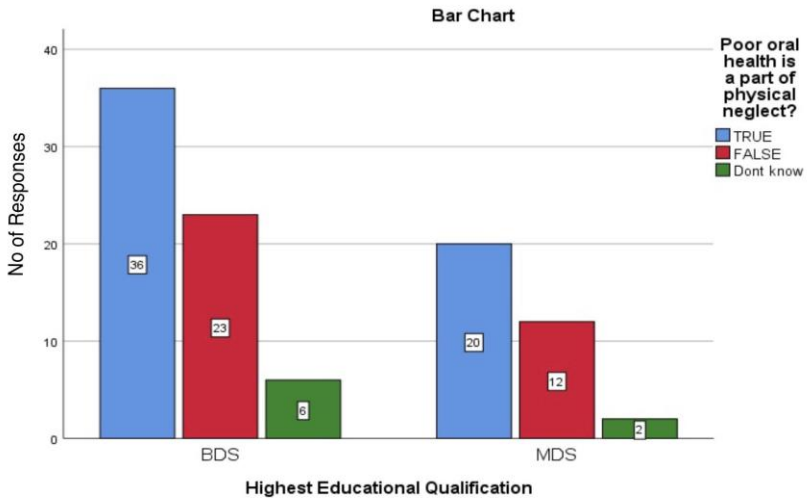

Figure 34:The Bar graph shows the association of different educated levels of dentists with respect to the knowledge on Oral health - part of child neglect. X axis represents the different educated levels of dentists and Y

axis represents the number of dentists who responded for true (blue), false (red), and didn't know (green). More BDS level dentists (36) responded that oral health is a part of child neglect than MDS level dentists, However comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.061(p value >0.05 statistically not significant).

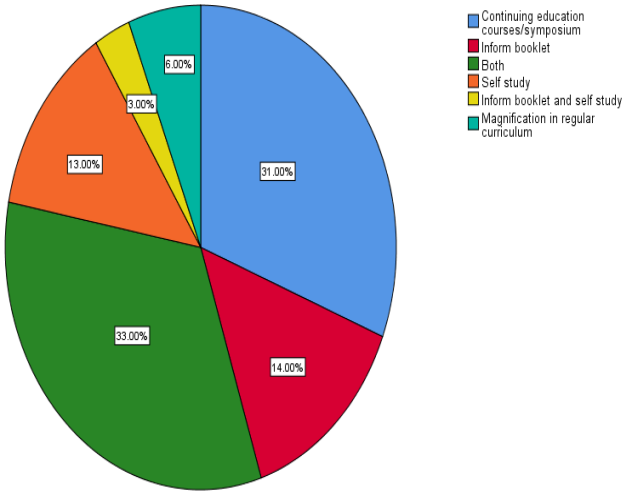

Figure 35: Pie chart representing the percentage distribution of knowledge on updating child abuse and neglect. Majority of participants 33% answered both (green), 31% answered continuing education courses/ symposium (blue), 14% answered inform booklet (red), 13% answered self study (orange), 6% magnification in regular curriculum (violet) and 3% answered inform booklet and self study (yellow).

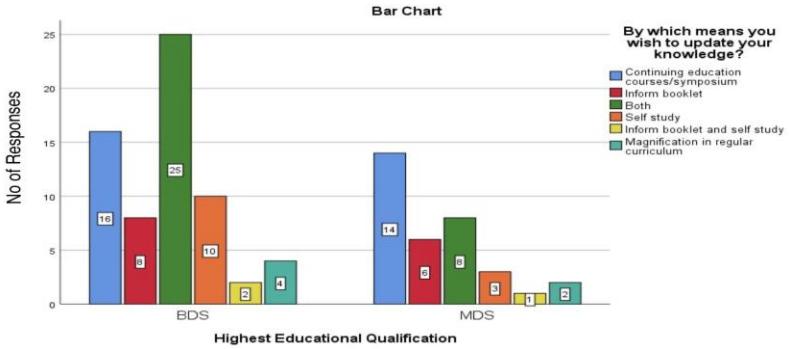

Figure 36:The Bar graph shows the association of different educated levels of dentists with respect to the knowledge on updating Child abuse and Neglect. X axis represents the different educated levels of dentists and Y axis represents the number dentists who responded for continuing education courses/ symposium (blue), inform

booklet (red), both (green), self study (orange), inform booklet and self study (yellow), magnification in regular curriculum (violet). More BDS level dentists (25) responded for both continuing education courses/ symposium and infomationbooletsetc in updating the knowledge on Child abuse and neglect than MDS level dentists, However comparison was not statistically significant. Chi square analysis was done and P value was found to be 0.454 (p value >0.05 statistically not significant)

Table 1: showing frequency of responses

S.no	**Questions**	**Choices**	**Percentages**
1.	Age.	• 20-29 • 30-39 • 40-49 • >49	• 47.5% • 27.3% • 23.2% • 2%
2.	Sex.	• Male • Female	• 60.6% • 39.4%
3.	Mention your Educational Highest Qualification.	• BDS • MDS	• 65.7% • 34.3%
4.	Mention your Experience in years.	• <5 • 5-10 • >10	• 34.7% • 42

			.9% ● 22 .4%
5.	Are you aware of child abuse and neglect?	● Yes ● No	● 94 % ● 6 %
6.	In your professional experience, have you ever seen a suspicious case of physical abuse among your child patients?	● Yes ● No	● 76 % ● 24 %
7.	What type of child abuse do you encounter more frequently?	● Physical abuse ● Sexual abuse ● Emotional abuse ● Educational abuse ● Drugging/Poisoning	● 27 % ● 33 % ● 23 % ● 12 % ● 5 %
8.	How do you recognise a case of child abuse and neglect?	● Through a direct allegation ● Through signs and symptoms ● Through child behaviour	● 40 % ● 40 %

			● 20 %
9.	Do you believe socio-economic status plays a role in child abuse and neglect?	● Yes ● No ● Don't know	● 61 % ● 29 % ● 10 %
10.	If yes, in which socio-economic strata is it more common?	● Lower income group ● Middle income group ● Higher income group	● 49 % ● 37 % ● 14 %
11.	Which gender children are more likely to be abused?	● Female ● Male ● Can't say	● 48 % ● 37 % ● 15 %

12.	Children from which type of families do you think are abused more commonly?	● Single parent ● Divorced/Separated parents ● Stepmother/Father ● Working mother	● 25 % ● 43 % ● 27 % ● 5 %
13.	Commonly observed abusers can be?	● Parent ● Teacher ● Elder sibling ● Relative ● Unknown	● 21 % ● 22 % ● 28 % ● 16 % ● 13 %
14.	How do you identify emotional abuse?	● Isolation ● Rejection ● Denial of affection ● Terrorization	● 26 % ● 30 % ● 38 % ● 6 %

15.	In your opinion, what kind of oral injuries are frequently encountered in child abuse?	● Fractured teeth ● Avulsed teeth ● Discoloured teeth ● Fracture of jaw ● Oral ulceration ● Oral bruises ● Others	● 17 % ● 27 % ● 28 % ● 5 % ● 5 % ● 15 % ● 3 %
16.	In your opinion, what kind of bodily injuries are frequently encountered in child abuse?	● Burns ● Abrasions ● Bite marks ● Bone fractures ● Others	● 18 % ● 35 % ● 33 % ● 7 % ● 7 %
17.	Where shall we report suspected?	● Social services/NGOs ● Police ● Both	● 14 % ● 39 %

		● Not sure	● 40 % ● 7 %
18	Bite marks observed on a child during a normal course of a dental visit should be investigated as a possible indicator of child abuse?	● True ● False ● Don't know	● 54 % ● 35 % ● 11 %
19.	Poor oral health is a part of physical neglect?	● True ● False ● Don't know	● 57 % ● 35 % ● 8 %
21.	Do you wish to improve your knowledge regarding child abuse?	● Continuing education courses/ symposium ● Inform booklet ● Both ● Self study ● Inform booklet and self study ● Modification in regular curriculum	● 31 % ● 14 % ● 33 % ● 13 % ● 3 %

			• 6 %

Types of child abuse encountered, which was about 27% of the participants responded for physical abuse, 33% of the participants responded for sexual abuse, 23% of the participants responded for emotional abuse, 12% of the participants responded for educational abuse, 5% of the participants responded for drugging/ poisoning (Figure 9), 37% of BDS dentists responded for physical and sexual abuse(Figure 10). Chi square analysis on comparing the educational level of dentists showed p=0.216 indicating statistically insignificant.Recognition of child abuse and neglect, which was about 40% of the participants responded as signs and symptoms, 35% of the participants responded for direct allegation, 25% of the participants responded for child behavior (Figure 11), 35% of the BDS dentists responded for signs and symptoms as recognition of child abuse (Figure 12). Chi square analysis on comparing the educational level of dentists showed p=0.162 indicating statistically insignificant.

Role of socio-economic status in child abuse, which was about 61% of the participants responded yes, 29% of the participants responded No, 10% of the participants responded Don't know (Figure 13), 38% of the BDS dentists answered Yes (Figure 14). Chi square analysis on comparing the educational level of dentists showed p=0.590 indicating statistically insignificant.Common socio-economic strata in child abuse, where majority of the participants which was about 49% of the participants responded for lower income group, 37% of the participants for responded middle income group, 14% of the participants responded for higher income group (Figure 15), 38% of the BDS dentists responded for lower income group (Figure 16). Chi square analysis on comparing the educational level of dentists showed p=0.807 indicating statistically insignificant.

Child abuse based on gender, where 48% of the participants responded for females, 37% of the participants responded for males, 15% of the participants responded for Can't say (Figure 17), 32% of the BDS dentists responded as Females (Figure 18). Chi square analysis on comparing the educational level of dentists showed p=0.233 indicating statistically insignificant.Types of family role in child abuse, which was about 43% of the participants responded for Divorced/single parent, 27% of the participants responded for stepmother/father, 25% of the participants responded for single parent, 5% of the participants responded for working mother (Figure 19), 28% of the BDS dentists responded for Divorced/Separated parent (Figure 20). Chi square analysis on comparing the educational level of dentists showed p=0.546 indicating statistically insignificant.

Commonly observed abusers, which was about 28% of the participants responded for Elder siblings, 22% of the participants responded for Teacher, 21% of the participants responded for Parent, 16% of the participants responded for relatives, 13% of the participants responded for unknown (Figure 21), 16% of the BDS dentists responded for Elder sibling (Figure 22). Chi square analysis on comparing the educational level of dentists showed p=0.608 indicating statistically insignificant.Identification of emotional abuse, which was about 38% of the participants responded for denial of affection, 30% of the participants responded for rejection, 26% of the participants responded for the isolation, 6% of the participants responded for terrorization (Figure 23), 25% of the BDS dentists responded for denial of affection (Figure 24). Chi square analysis on comparing the education level of dentists showed p=0.549 indicating statistically insignificant.Oral injuries encountered in child abuse, which was about 28% of the particpants responded for discoloured teeth, 27% of the participants responded for avulsed teeth, 17% of the participants responded for fractured teeth, 15% of the participants responded for oral bruises, 5% of the participants responded for fracture of jaw, 5% of the participants responded for oral ulceration, 3% of the participants responded for others (Figure 25), 18% of the BDS dentists responded for discoloured teeth (Figure 26). Chi square analysis on comparing the educational level of dentists showed p=0.780 indicating statistically insignificant.Body injuries frequently encountered in child abuse, which was about 35% of the participants responded for abrasions, 33% of the participants responded for bitemark, 18% of the participants responded for burns, 7% of the participants responded for bone fracture and 7% of the participants responded for others (Figure 27), 26% of the BDS dentists responded for abrasions (Figure 28). Chi Square analysis on comparing the educational level of dentists showed p=0.093 indicating statistically insignificant.Reporting of suspect, where 40% of the participants responded for both(social services/ NGOs and police), 39% of the participants responded for police, 14% of the participants responded for socialservies/NGOs, 7% of the participants responded for not sure (Figure 29), 28% of the BDS dentists responded for Both (Figure 30). Chi square analysis on comparing the educational level of dentists showed p=0.086 indicating insignificant.

Bite marks observed on a child in dental visit investigated as child abuse, which was about 54% of the participants responded for True, 35% of the participants responded for False, 11% of the participants responded for Don't know (Figure 31), 31% of the BDS dentists responded for True (Figure 32). Chi square analysis on comparing the educational level of dentists showed p=0.108 indicating statistically insignificant.

Poor oral health- part of physical neglect, which was about 57% of the participants responded for True, 35% of the participants responded for False, 8% of the participants responded for Don't know (Figure 33), 55% of the BDS dentists responded for True (Figure 34). Chi square analysis on comparing educational level of dentists showed p=0.837 indicating statistically insignificant.

Update of knowledge, where majority of the participants which was about 33% of the participants responded for Both (Continuing education courses/ symposium and inform booklet), 31% of the participants responded for Continuing education course/ symposium, 14% of the participants responded for Inform booklet, 13% of the participants responded for Self study, 6% of the participants responded for magnification in regular curriculum, 3% of the participants responded for Self study and inform booklet (Figure 35), 26% of the BDS dentists responded for Both (Figure 36). Chi square analysis on comparing the educational level of dentists showed p=0.454 indicating statistically insignificant.

Physical/Maltreatment to young children can vary from Mild (Few bruises, minor burns, single fracture), Moderate (Numerous bruises, minor burns, single fracture) or Severe (large burn, CNS injury, Multiple fracture other life threatening injuries). Since multitudes of these injuries involve orofacial region, Dentist can be the foremost of detecting signs of physical abuse, sexual abuse, health care neglect and safety neglect [23]. Nevertheless global statistics have shown under notification of suspicious cases which might be due to the lack of information regarding the diagnosis and knowledge about the obligation of notifying suspected cases among various health professionals [24]. Thus a Cross-sectional survey was undertaken to obtain information regarding Dentist's knowledge and attitude regarding exigent issue of child abuse.Majority of the participants (96%) in our study had awareness on Child abuse and neglect. (Figure 5,6). Similar findings were seen in studies like Vijay John et al,1999 - (80%), Nina Markovic et al, 2015 - (78%) [6][1]. This shows that the majority of dentists in general had awareness of CAN. 76% of the participants had experienced encountering of suspicious cases on child abuse (Figure 7,8) . Similar findings were seen in studies like Vijay John et al, 1999-(98%), Harsimran Kaur et al,2016 -(92%). This shows the majority of the dentists experienced suspicious cases of physical abuse [6][4].On the typee of child abuse encountered, malority of the participants responded for physical abuse (Figure 9,10), Similar findings were seen in studies like R. Al-Dabaan et al,2014 - (43%) This shows the majority of the dentists responded physical abuse as most frequently encountered child abuse [7].

On recognition of child abuse and neglect, majority 40% of the participants responded as signs and symptoms (Figure 11,12). Similar findings were seen in studies like Vijay John et al,1999- (55%). Majority of them responded for signs and symptoms for recognition of child abuse [6].61% of the participants responded yes on role of socio-economic status in child abuse (Figure 13,14), Similar findings were seen in studies like Vijay John et al.1999- (49%). This implies that Socio-economic status plays a important role in Child abuse and Neglect [6].Majority of the participants which was about 49% of the participants responded for occurence of child abuse among lower income group(Figure 15,16). Similar findings were seen in studies like Nina Markovic et al,2015- (39%). This implies that Lower income group is the common socio-economic strata for occurence of child abuse [1].48% of the participants responded for female children being most abused among gender (Figure 17,18). Similar findings were seen in studies like Harsimran Kaur et al.2016- (33%), Deshpande Anshula et al. 2016- (36%). This implies that Females were the most child abused based on gender [4,25].On Type of family role in child abuse, 43% of the participants responded for Divorced/single parent. (Figure 19,20). Similar findings were seen in studies like

Vijay John et al.1999 (29%), Deshpande Anshula et al. 2016- (31%). Majority of them responded for Divorced/ separated parents [6,25].On commonly observed abusers, 28% of the participants responded for Elder siblings (Figure 21,22). Similar findings were seen in studies like Nina Markovic et al 2015- (28%). This implies that Elder siblings are the commonly observed abusers [1].

On Identification of emotional abuse, 38% of the participants responded for denial of affection, (Figure 23,24). Similar findings were seen in studies like Vijay John et al.1999- (40%), R. Al-Dabaan et al. 2014-(41%) and no opposing findings were found. Hence denial of affection is the most seen in emotional abuse [6,7].On oral injuries encountered in child abuse, maority of particpants responded for discoloured teeth, followed by avulsed teeth, fractured teeth, oral bruises, fracture of jaw and oral ulceration (Figure 25,26) Similar findings were seen in studies like R. Al-Dabaan et al. 2014-(31%). This states that above mentioned oral injuries are frequently encountered in child abuse [7].

On Body injuries frequently encountered in child abuse, majority 35% of the participants responded for abrasions (Figure 27,28) Similar findings were seen in studies like Harsimran Kaur et al.2016 - (38%)R. Al-Dabaan et al.2014- (41%). Hence abrasions as the most encountered body injuries in child abuse [4,7].For Reporting of suspects, majority (40%) of the participants responded for both(social services/ NGOs and police) (Figure 29,30) Similar findings were seen in studies like R. Al-Dabaan et al. 2014-(38%). Social services/ NGOs and police should be contacted for reporting the suspect [7].

54% of the participants responded for observation of Bite marks on a child in dental visit in cases of child abuse. (Figure 31,32) Similar findings were seen in studies like R. Al-Dabaan et al,2014-(60%)Harsimran Kaur et al,2016 - (70%) This implies that Bite marks are frequently observed on a child in case of child abuse [4,7].57% of the participants stated Poor oral health as part of neglect (Figure 33,34) Similar findings were seen in studies like R. Al-Dabaan et al. 2014- (67%), Harsimran Kaur et al. 2016 -(80%). Poor oral health is an important identification for child neglect [4,7]. One such example is rampant caries in a child. [26]On Update of knowledge, majority of the participants responded for Continuing education courses/ symposium and informed booklet Figure 35,36) Similar findings were seen in studies like R. Al-Dabaan et al.2014-(56%). Dentists must update knowledge through Continuing education courses/symposium and inform booklet [7].The limitations of the study were the limited sample size and Homogenous population. This survey questionnaire had been restricted to a particular geographic location. With more sample size we can get more reliable results. This survey emphasises the need for knowledge on child abuse and also setting up more awareness programs.

IV. CONCLUSION:

Knowledge and Awareness on Child Abuse and Neglect was found to be high among dentists . Interestingly, BDS level dentists had a higher knowledge nad awareness on child abuse and neglect than MDS dentists. Children witnessing violence are at an increased risk of growing up to be abusers themselves. So we as health professionals can play a proactive role in breaking the integrational vicious cycle of violence.

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AUTHOR CONTRIBUTION:

Hariprasath : literature search, data collection, analysis, manuscript writing

Dr. K. R. Don: Topic discussion and data discussion, Manuscript drafting

Dr.R.Gayatri Devi: Data verification and Manuscript drafting

CONFLICT OF INTEREST: All the authors declare that there were no conflicts of interest.

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