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Orginal Article

ORAL HEALTH KNOWLEDGE AND ATTITUDE AMONG CAREGIVERS OF SPECIAL HEALTH CARE NEEDS CHILDREN AT SPECIAL EDUCATION SCHOOLS IN PESHAWAR: A CROSS-SECTIONAL STUDY

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ABSTRACT

Objectives: *To assess the oral hygiene knowledge, practice and attitude among the caregivers of the special health care need children in Peshawar.*

Materials and Methods: *About 128 participants took part in this study. A validated self-administered questionnaire was used to evaluate and record the oral health knowledge and attitude of caregivers (Parents and Teachers) of the special children. The questionnaire contained a total of 22 questions, each correct question was scored 1 and incorrect was scored 0. The caregivers then were ranked according to their score achieved. The exclusion criteria of caregivers are those who did not want to participate in the study and an experience of less than 2 years. The inclusion criteria for the caregivers having at least primary school education for the parents and bachelor's degree for the schoolteachers.*

Results: *Our study result showed that the association between child relation and knowledge level was statistically significant (P = 0.003). Regarding gender, no significant association was observed between gender and knowledge level (P = 0.672). Concerning age, no significant association was found between age and knowledge level (P = 0.473). A significant association was observed between qualification and knowledge level (P = 0.003). Pearson's correlation test was used to analyze the data collected.*

Conclusion: *Association between the child relationship and knowledge levels were statistically significant. No significant association was found between age and gender with knowledge levels. A significant association was observed between qualification of the caregivers and oral health knowledge.*

Key words: *Oral Health Knowledge, Caregivers, Special Healthcare Needs Children*

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INTRODUCTION

A caregiver is a guardian or helper of a person who cannot take care of themselves during daily normal life activities. American Academy of Paediatric Dentistry (AAPD) defines special health care needs (SHCN) as any impairment or limiting condition

that necessitates medical management, health care intervention, and utilization of specialized services or programs, whether it be sensory, behavioral, cognitive, emotional, mental, developmental, or physical." The disorder may be developmental, congenital, or acquired by illness, trauma, or environmental factors. It may result in considerable limits in major life activities or in the ability to complete everyday self-maintenance tasks[1].

People with disabilities are prone to more dental issues as compared to other normal individuals[2,3]. As they are more prone to dental issues, they are at high caries risk due to their inability to take better care of themselves[4]. According to United Nations, physical, mental, or sensory disabilities affect 650 million people, or 10% of the world's population, out of which 80% live in developing nations.

Global estimates suggest that the prevalence of moderate to severe injuries resulting in disability in low-income countries is 4.5%[5]. However, for the 0-4 age group, this rate is 1.3%. Pakistan is one of the few countries that includes disability information in its census. Pakistan's 1998 census showed that people with disabilities constituted 2.5% of the total population[6] and according to 2017 census only 0.48% of the population had disability in Pakistan[7]. This was further categorized as visual impairment (8.1%), hearing impairment (7.4%), physical impairment (19%), 'mental handicap' (6.4%), 'mental impairment' (7.6%), multiple disability (8.2%), and 'others' (43.3%). Fifty-five percent of disabled people in Pakistan are in Punjab, followed by Sindh with 28.4%; Whether in the city or town, men outnumber women in terms of disabilities. The use of this information is limited, it is a step-by-step process that involves personal information, and is not age-specific. Social studies conducted in low- and middle-income countries have revealed that childhood disability rates vary between 0.4% and 12.7%[7]. Many cross-sectional studies in Pakistan have reported disability rates of 2.8%, 3.6%, and 6.2%[8-11] in urban and semi-urban populations. It is also known that most of the Pakistani population is living in rural areas[12].

Data from all segments of society are needed to establish a public health foundation for the prevention, early diagnosis, rehabilitation and prediction of disability risk. According to a study done in rehabilitation centre in AlKharj, Saudi Arabia by Altaf H. Shah and Mustafa Naseem[13] found that special healthcare needs children caretakers lacked the appropriate approach towards oral health. Priority should be given to dental education and training programs in order to improve caregiver's attitudes towards oral health. Krishnan and Lakshmi[14] conducted a study over four months among caretakers of special needs children aged three to seventeen who went to a tertiary care facility in Chennai, India. The study found that the mothers' level of knowledge was low. It was discovered that the mean knowledge, attitude, and practice scores were statistically significantly impacted by age, education, and income.

Literature regarding the dental knowledge of special healthcare needs children's caregivers is scarce and not well structured in our locality is scarce. The aim of the study was to assess and evaluate the oral hygiene knowledge, practice and attitude among the caregivers of the special health care need children in Peshawar.

MATERIALS AND METHODS

This study was conducted from September 2022 to April 2023 in multiple special health care needs children's schools in Peshawar. The sample size was calculated to be 120 by using the WHO sample size calculator, the total sample size was calculated to be 114 by taking 92% frequency for question number 2 (a very basic question related to oral health) of another related study14 and taking 95% confidence interval and 5% margin of error. 128 participants took part in the study. Out of the total number of special education institutes in the city 4 were selected after random sampling technique. A validated self-administered questionnaire was used to evaluate and record the oral health knowledge and attitude of caregivers (Parents and Teachers) of the special children. The questionnaire was first piloted on 20 caregivers; Cronbach's alpha value was derived to be 0.8. The questionnaire was divided into four sections i.e. Section 1 assessed the knowledge regarding oral hygiene, section 2 regarding the dietary habit, section 3 regarding attitude to early dental treatments or visits and section 4 is about prevention. The questionnaire contained a total of 22 questions, each correct question was scored 1 and incorrect was scored 0. The score achieved was converted into percentage for each caregiver/parent.

The total score was then divided into three main categories i.e. 0% to 33% = poor knowledge (category 1), 34% to 66% = moderate knowledge (Category 2) and good knowledge (category 3) if the score was between 67% to 100%. The caregivers then were ranked according to their score achieved. Pearson's correlation coefficient was used to analyze the data. Data was collected after taking an informed consent from every participant in the study.

The exclusion criteria of caregivers are those who did not want to participate in the study and an experience of less than 2 years. The inclusion criteria for the caregivers having at least primary school education for the parents and bachelor's degree for the school teachers. Ethical approval was taken from the ethical committee of Khyber college of Dentistry Peshawar having ID of 153/ADR/KCD. Data was analyzed using SPSS version 23.

RESULT

Out of total 128 participants, in terms of child relation, 42.2% of participants were fathers (n=54), 23.4% were mothers (n=30), and 34.4% identified as caregivers (n=44). Regarding gender distribution, 60.9% were male caregivers(n=78), while 39.1% were female caregivers (n=50).

The mean total score for oral hygiene knowledge, practices, and attitudes was 59.06 (SD = 17.92), with scores ranging from 9.09 to 100.

The study investigated the association between knowledge levels regarding oral hygiene and various demographic variables among caregivers of special healthcare needs children in Peshawar. The findings from Table- 2 indicate that the association between child relation and knowledge level was statistically significant (P = 0.003). Fathers exhibited poor knowledge in 53.8% of cases, moderate knowledge in 50.8%, and good knowledge in 28.0%. Among mothers, 15.4% had poor knowledge, 29.2% moderate knowledge, and 18.0% good knowledge. Caregivers showed 30.8% with poor knowledge, 20.0% with moderate knowledge, and 54.0% with good knowledge.

Regarding gender, no significant association was observed between gender and knowledge level (P = 0.672). Male caregivers demonstrated poor knowledge in 61.5%, moderate knowledge in 64.6%, and good knowledge in 56.0%. Female caregivers showed 38.5% with poor knowledge, 35.4% with moderate knowledge, and 44.0% with good knowledge. Concerning age, no significant association was found between age and knowledge level (P = 0.473). Caregivers aged 22-37 exhibited poor knowledge in 30.8%, moderate knowledge in 27.7%, and good knowledge in 40.0%. Those aged 38-53 demonstrated 53.8% with poor knowledge, 63.1% with moderate knowledge, and 46.0% with good knowledge. Participants aged more than 53 showed 15.4% with poor knowledge, 9.2% with moderate knowledge, and 14.0% with good knowledge. A significant association was observed between qualification and knowledge level (P = 0.003). Illiterate caregivers had 7.7% with poor knowledge, 13.8% with moderate knowledge, and 16.0% with good knowledge. Those with a middle-level education showed 0.0% with poor knowledge, 13.8% with moderate knowledge, and 6.0% with good knowledge. Participants with a Matric qualification demonstrated 30.8% with poor knowledge, 20.0% with moderate knowledge, and 12.0% with good knowledge. HSSC holders showed 30.8% with poor knowledge, 23.1% with moderate knowledge, and 14.0% with good knowledge. Graduates exhibited 30.8% with poor knowledge, 24.6% with moderate knowledge, and 18.0% with good knowledge. Post-graduates had 0.0% with poor

Table 1: Descriptive Statistics of demographic variables

Variables	Categories	n	%
Child relation	Father	54	42.2
	mother	30	23.4
	caregiver	44	34.4
Gender	Male	78	60.9
	Female	50	39.1
Qualification	Illiterate	18	14.1
	Middle	12	9.4
	Matric	23	18
	HSSC	26	20.3
	Graduate	29	22.7
	Post-Graduate	20	15.6
Age	22-37	42	32.8
	38-53	71	55.5
	More then 53	15	11.7
Descriptive statistics of Continuous variable			
	Mean±SD	Min	Max
Age	41.66±9.18	22	68
Total score	59.06±17.92	9.09	100

knowledge, 4.6% with moderate knowledge, and 34.0% with good knowledge.

DISCUSSION

This study was carried out on 128 caregivers and parents of special health care need children to determine and assess their oral health knowledge and attitude towards dental care.

According to the results we concluded that the association between the child relationship and knowledge level was statistically significant (p=0.003). Most of the caregivers showed good knowledge (54%) while parents (fathers) had the highest number of poor knowledge (53.8%). No significant association was associated between age and knowledge (p=0.473). No significant association was observed between gender and knowledge (p=0.672). A significant association was observed between qualification and knowledge (p=0.003), the post-graduates being the most (34%) with good knowledge while illiterate and middle passed, caregivers and parents showed 16% and 06% good knowledge respectively.

There is little literature available that correlates the association between special healthcare needs children's relationship and the oral health knowledge. In our study child relationship and knowledge levels were statistically significant. In our study the institutional caregivers, teachers and parents all fell under the same caregiver's category. This was done to find out the differences between the different types of caregiver's oral health knowledge. Its significance

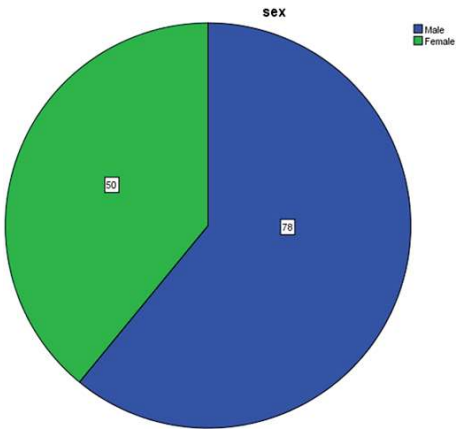

Fig 1:

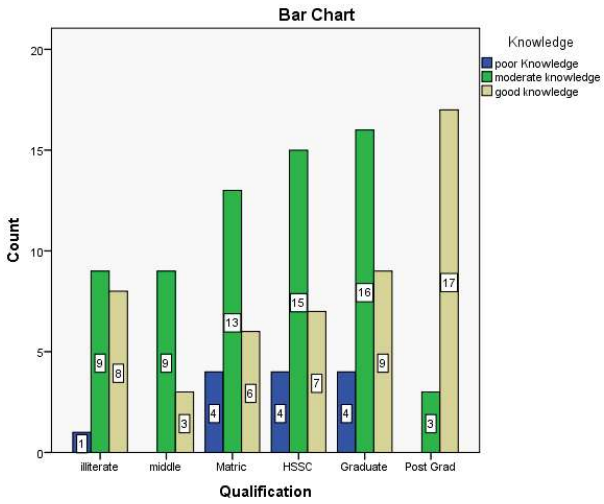

Fig 2:

Table 2: Association of Knowledge level with different independent(demographic) variables

Variables	Categories	Knowledge level			P value
		Poor Knowledge	Moderate Knowledge	Good Knowledge	
Child relation	Father	07(53.8%)	33(50.8%)	14(28.0)	0.003
	Mother	02(15.4%)	19(29.2%)	09(18.0%)	
	Caregiver	04(30.8%)	13(20.0%)	27(54.0%)	
Gender	Male	08(61.5%)	42(64.6%)	28(56.0%)	0.672
	Female	05(38.5%)	23(35.4%)	22(44.0%)	
age	22-37	04(30.8%)	18(27.7%)	20(40.0%)	0.473
	38-53	07(53.8%)	41(63.1%)	23(46.0%)	
	More then 53	02(15.4%)	06(9.2%)	07(14.0%)	
Qualification	Illiterate	01(7.7%)	09(13.8%)	08(16.0%)	0.003
	Middle	0(0.0%)	09(13.8%)	03(6.0%)	
	Matric	4(30.8%)	13(20.0%)	06(12.0%)	
	HSSC	4(30.8%)	15(23.1%)	07(14.0%)	
	Graduate	4(30.8%)	16(24.6%)	09(18.0%)	
	Post-Grad	0(0.0%)	03(4.6%)	17(34.0%)	

is due to the fact that knowledge if practically implemented, shall provide better care for the special healthcare needs children and shows which type of caregiver shall be more helpful for the special healthcare need children (as institutionalized children do visit their homes from time to time). In our study we concluded that the association between the child relationship and knowledge level was statistically significant (p=0.003). Most of the caregivers showed good knowledge (54%) while parents (fathers) had the greatest number of poor knowledge (53.8%). A study that is remotely related to our study, conducted by Jingchun Nie and Jinbiao Ye in china[16] showed that on average, mothers scored 4.6 on the study questionnaire and thus possessed the most amount of health and nutrition knowledge, primary family caregivers scored 3.6, while fathers possessed the least amount of knowledge. This is in disagreement of our study which shows that the caregivers oral health knowledge was the highest followed by mothers, while fathers had the least amount of oral health knowledge. This contrast between the two studies might be due to the different study designs although it signifies that differences are present in knowledge among different types of caregivers.

There have been a few studies conducted on oral health knowledge of the caregivers and special health care needs children. According to one study conducted by Harender Singh and Sanjeeb Chaudhary[17] in Nepal, women have a higher overall knowledge about oral health, as indicated by their higher percentage score (77.2% women vs. 68.5% for men), but the quality of their knowledge varies. Men, despite having a lower overall knowledge score, appear to have a higher proportion of "good" knowledge, whereas women are more likely to have "fair" or "moderate" knowledge and are more prone to poor knowledge about oral health. This indicates that gender influences the distribution of oral health knowledge. On the other hand, in our study there was no significant association between gender and the caregiver knowledge levels. The reason might be due to the differences in caregivers training between the two regions.

According to another study conducted by Dominique and Lucía[18] shows that knowledge was positively connected with education, and attitudes were favorably connected with income and education, supporting the idea that socioeconomic determinants of health (i.e., carer education and income) have an impact on oral health. These results coincide with our findings that a significant and positive correlation exist between oral health knowledge and qualification of the caregivers.

In a study conducted by Shahabe Saquib Abullais and Falah Mohammed[19] conducted in in Southern Region of Saudi Arabia showed that a comparison between the various age groups did not show a significant difference in the level of knowledge and attitude of the caregivers (p-value > 0.05) which is in agreement with our study.

CONCLUSION

The results of our study concluded that the association between the child relationship and knowledge levels were statistically significant. No significant association was found between age and gender with knowledge levels. A significant association was observed between qualification of the caregivers and oral health knowledge.

Structured oral health training programs should be conducted for the caregivers working in special education institutions in collaboration with dental health experts. This would develop better knowledge and skills of the caregivers in maintaining oral health of special healthcare needs children in a more optimal way.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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None declared.

AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design:	OA, SA, FQ, FP, MS, HSQ, SSA
Acquisition, Analysis or Interpretation of Data:	OA, SA, FQ, FP, MS, HSQ, SSA
Manuscript Writing & Approval:	OA, SA, FQ, FP, MS, HSQ, SSA

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.