Oral health knowledge and attitude among caregivers of special needs patients at a Comprehensive Rehabilitation Centre: an analytical study

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Summary

***Aim*. To evaluate knowledge and attitude of caregivers/healthcare workers regarding oral health of special need patients, at a comprehensive rehabilitation centre.**
***Material and methods*. A validated self-administered structured questionnaire was used in an interview style among 120 caregivers at a comprehensive rehabilitation centre. The first part of questionnaire collected demographic information (age, gender, experience, literacy). The other part of the questionnaire was related to the knowledge and attitude of caregivers regarding importance of oral health including oral hygiene practices, cause of tooth decay, significance of fluoride, common oral problems and need for oral health education. Comparison between oral health knowledge and oral health attitude of caregivers was done using one-sample t Test. The level of significance was set as p=0.005*.**
***Results*. Adequate oral health knowledge was found to be among 59.2% and favourable attitude of caregivers towards oral health care was found among 48.3%. The results indicate that though majority among caregivers had adequate knowledge but their attitude towards oral health was inadequate.**
***Conclusion*. Caregivers showed a deficiency in the proper oral health attitude. To improve oral health attitudes of caregivers, dental education plus training programs should be given high priority.**

Key words: caregivers, knowledge, oral health, special needs.

Introduction

Oral health in special need patients is one of the most deserted aspects of care. The degree of unmet dental needs amongst this populace is highly compromised when compared to the general population (1). Maintaining good and optimal oral health in these physically handicapped and intellectually disabled individuals is very challenging as they also have a compromised general health (1, 2). It is known that good oral health can help in improving general health, self-esteem, social integration and thereby the quality of life (3, 4). Age, severity of impairment and living conditions have been reported to influence oral as well as general health of disabled children and adults (5).
Prevention of oral diseases in special needs group has higher importance due to limited availability of resources and poor access to oral health care (6). It has been demonstrated that oral health education is well recognised and shows improvement of attitudes and knowledge towards dental health care especially among caregivers of special needs patients (7). These improvements are found to be significant when in parallel with better delivery of oral health care for such people (8).
It has been proposed that educating people involved

in care of special need patients is beneficial particularly with regard to oral health (1, 9). Disabled children and adults living in long-term accommodations are usually dependent on others for their personal care. Parents, siblings or caregivers usually render this care. Hence, it is important that these caregivers have the knowledge and are aware of the preventive practices for maintaining optimal oral health for this group under their care (10, 11). Unfortunately, majority among the caregivers lack the knowledge of proper oral health care themselves and thus fail to recognize its importance resulting in not applying proper oral health behaviour (12).

The incidence of dental disease is on a rise among the disabled people in the gulf region. Several studies across the globe have focussed on a need to improve and prevent dental diseases in special care children (13, 14). Some of the people with disabilities may be directly dependent on caregivers for their private care and the role of these carers is pivotal in the life of such people. Therefore, interventions should be aimed towards caregivers in a culturally appropriate and acceptable manner that directly improves their knowledge as well as the attitude, towards special needs patients, in providing optimal level of oral care. (12, 15).

To our knowledge, from indexed literature data available on caregivers knowledge and attitude on Saudi population is scarce and limited. Therefore, the objective of the study was to assess the knowledge and attitude of caregivers/healthcare workers regarding oral health of special need patients, at a comprehensive rehabilitation centre in Al-Kharj, Saudi Arabia. The evidence acquired through this study may benefit to assist the level of information and approach, for oral health care, of caregivers working in special care centres.

Materials and methods

An analytical cross-sectional study was conducted among 120 caregivers at comprehensive rehabilitation centre in AlKharj, Saudi Arabia. The rehabilitation centre accommodated around 168 special needs patients. The caregivers were responsible for providing various needs to these patients i.e. feeding, giving bath, clipping nails, changing clothing and bedding as well as oral care. An interview style questionnaire was designed for this study.

The sample was selected by non-probability convenience sampling. The total estimated time of the study was three months. Sample collection was based on the inclusion criteria i.e. all the caregivers who returned the consent form were included. Furthermore, caregivers who did not manage to return the consent form or were absent on the day of data collection were excluded from the study. Since the caregivers who participated in the study were from Sudan, Philippines, Egypt, India, Bangladesh, Sri Lanka and Nepal etc., the questionnaire was designed in English, Arabic, Hindi and Bangla languages using support from native speakers in order to improve the comprehensibility for the caregivers.

The interview style questionnaire for this study was piloted using surveys previously conducted by Prabhu et al. (16) and Koneru A & Sigal MJ (17). The questionnaire was divided into three sections following information about caregivers' knowledge and attitudes.

Section I: solicited general demographic and professional background information. Section II: integrated questions about oral health knowledge and personal oral health practice by the caregivers. Section III: comprised of questions, which aimed to assess attitude about oral health care and practice.

The study was reviewed by the Ethical Committee at Salman bin Abdulaziz University and was granted ethical approval. An official permission was attained from the director of the comprehensive rehabilitation centre, AlKharj. Furthermore, a written approval from caregivers was also attained. All ethical procedures were in accordance with the ethical standards and in harmony with the Helsinki Declaration of 1975 reviewed in 2008.

The data was analysed and managed by Statistical Package for Social Sciences 20 (SPSS Inc. Chicago, IL, USA). Descriptive analysis of the data including frequencies, percentages and means of caregiver's knowledge and attitude were calculated. Comparison between oral knowledge and oral health attitude of caregivers was done using one-sample t Test. Level of significance was set as significant at p=0.05*.

Results

Socio demographic data of the subjects is presented in Table 1. Regarding knowledge of caregivers of whether oral health is associated to general health, 78.3% (n=94) responded in positive whereas 21.7% (n=26) stated that there was no relation. Furthermore, 81.7% (n=98) of the caregivers acknowledged that people with disabilities were more prone to oral health problems. 87% (n=98) of the caregivers accepted that it is important to clean teeth, however 13.3% (n=16) did not consider it essential. Regarding knowledge about powered tooth brushes only 8.3% (n=10) of caregivers responded that they had knowledge about powered toothbrushes while the rest 91.7% (n=110) did not have knowledge about it. Table 2 shows the descriptive knowledge of caregivers regarding oral health care.

Table 3 describes descriptive analysis of caregiver's attitude. 44.2 (n=53) and 21.7% (n=26) of the caregivers accepted that oral health care for the people with disabilities is difficult and challenging. Majority among the caregivers 55% (n=66) felt that they should visit a dentist only when in pain, while the rest 22.5% (n=27) and 13.3% (n=16) replied that the visits should be made once and twice a year respectively. Poor communication 33.3 (n=40), bad smelling mouth

Table 1. Socio demographic data.

Variables	Frequency	Percentage
Age		
19-25 years	32	26.7
26-35	60	50.1
36 onwards	28	23.2
Qualification		
Less than high school	24	20
High school to higher secondary school	96	80
Experience		
Less than 2 years	60	50
2-5 years	60	50
Care		
Direct Patient care	120	100
Language		
Arabic	55	45.8
Non Arabic	65	54.2

and bleeding gums 25% (n=30) were considered the main problems while taking care of the inhabitants. On a question asked to the caregivers that how they learnt to take care of individuals with disabilities; more than half of caregivers 53.3% (n=64) answered that they had learnt from co-workers and others. 75% (n=90) of caregivers established that oral health education and training can help in improving the oral health of this group.

Table 4 presents difference between the knowledge and attitude mean scores. The means score of oral health knowledge among caregivers was 15.36. As far as oral health attitude was concerned the mean difference of scores was 18.14, both were found to be statistically significant at p=0.0001 using a single sample T test.

Discussion

Oral health care of special needs people seems to be a challenging task for caregivers (16). Thus, proper knowledge of oral health care is prudent to administer best of their services. More than 3/4 of the responses by the caregivers agreed that general health is reliant on good oral health (10, 18). In addition, more than 3/4 of caregivers agreed to the fact that disabled individuals are more prone to oral health problems. These findings were in relation to different studies that individuals with disabilities or some other sort of impairment (e.g. mental illness, behaviour problems, learning difficulties, etc.) have poorer oral health conditions compared to healthy people. Furthermore, individual with disabilities show higher prevalence of oral diseases such as dental caries, periodontal diseases and poor oral hygiene status (19, 20). A study with the same group pointed out high caries rate, higher complexity of periodontal disease as well as higher incidence of retained teeth (21). Almost 3/4 of the caregivers believed that it is important to clean teeth and that regular oral care can prevent oral diseases. This indicates that caregivers knowledge about oral hygiene practices were profound, which may echo positively on the special care patients of the rehabilitation centre. Since caregivers who act first themselves on the advice they give, will provide good motivation and counselling to patients as well (18, 22).

The awareness level of caregivers on fluoride preventing dental decay was acceptable. Almost three in five acknowledged that fluoride prevents caries. Fluoride tooth pastes have been considered as benchmark to prevent caries for the past three eras, and is also the most common method of fluoride delivery (23). It is estimated that on average, it reduces 24% of DMF score (24). Previous studies have shown parents and caregivers, understanding the importance of fluoride in preserving healthy oral health (18, 25).

Interestingly, the caregivers showed adequate knowledge regarding frequency of tooth brushing. Half of the health workers recognized that teeth should be brushed twice daily and the rest halve believed that it is better to brush teeth once a day. Professional recommendation and evidence suggests that tooth brushing is advised for at least 2-3 minutes, twice daily using bass technique (26). In addition, a healthy trend by the caregivers was witnessed when asked about aids of cleaning teeth other than brushing. Almost 50% of the caregivers used Miswak as one of the source to clean their teeth. This tendency can be

Table 2. Descriptive knowledge of caregivers.

Variable	Frequency (n= 120)	Percentage
Is oral health related to general health		
Yes	94	78.3
No	26	21.7
Do you think disabled people are more prone to Oral health problems		
Yes	98	81.7
No	22	18.3
Do you think cleaning teeth is important		
Yes	104	86.7
No	16	13.3
Daily care of teeth can prevent Oral Disease		
Yes	120	100
No	0	0
Fluoridated toothpastes prevents dental decay		
Yes	66	55
No	54	45
How many times it is ideal to brush teeth		
Not necessary	0	0
Whenever possible	0	0
Once daily	58	48.3
Twice daily	60	50
More than twice daily	2	1.7
What are the aids apart from brushing that is used		
Rinse with water	25	20.8
Finger	26	21.8
Mouthwash	20	16.6
Tooth pick	0	0
Miswak	49	40.8
Which things can cause decayed teeth		
Sweetened confectionary	38	31.7
Fruits like date	46	38.3
Tea/ coffee	10	8.3
Carbonated drink	26	21.7
Have you seen or heard about powered tooth brush		
Never	0	0
Only heard about it	10	8.3
Have seen it but not used	110	91.7
Used it	0	0

considered healthy as there are many oral as well as general health benefits quoted by the use of miswak (2). These may include anti plaque, anti-fungal, and anti-microbial effects (2, 27). Miswak is also considered as the cost effective, inexpensive, cheap method of maintaining good oral health (2, 28).

Intriguingly, the awareness level of care providers on diet and caries was agreeable. This is important and may provide good wire of knowledge of healthy and balanced diet to the parents plus the disabled individuals themselves. Balanced dietary habits are very important for disabled individuals as if ignored or not taken care off may result in compromised oral hygiene status and thus increase in the incidence of caries in the dependents. The caregivers should strictly adhere to the current and up to date knowledge regarding suitable and healthy diet for disabled individuals (18, 25).

In contrast, enthrallingly in the study attitude of caregivers towards oral health was considered unsatisfactory and inadequate (Tab. 5). When inquired about how many times it is necessary to go for dental check-up in a year, more than half of the responders thought only in case of dental problem. This tendency has been shown in previous studies as well where utilization and access to care is symptom oriented (29, 30). Regular dental check-up is of prime importance in the prevention of dental disease. These visits provide an opportunity for dentists to take clinical preventive measures such as dental prophylaxis, topical fluoride application, etc. and reinforce healthy home dental care. In a study by Watt (31), he explains how majority of the diseases is preventable. The challenging task is to carve opportunity, which is conducive, both at individual and community level. Though there is a marked advancement in operative dental care, symptoms or treatment oriented approaches never can eradicate oral diseases (32).

Table 3. Descriptive analysis of caregiver's attitude.

Variable	Frequency (n= 120)	Percentage
How do you rate your personal Oral health		
Excellent	17	14.2
Very good	28	23.3
Good	40	33.3
Fair	24	20.0
Poor	11	9.2
How would you rate the oral health care for the disabled		
Easy	15	12.5
Difficult	22	18.3
Very difficult	26	21.7
Challenging	53	44.2
I don't know	4	3.3
How many times should we visit a dentist in a year		
When you have a problem	66	55.0
Frequently	8	6.7
Once every year	27	22.5
Twice every year	16	13.3
I don't know	3	2.5
When you should change your tooth brush		
Whenever you like	13	10.8
When bristles are out of shape	49	40.8
Every three months	19	15.8
Every six months	17	14.2
I don't know	22	18.3
How did you learn to take care of oral health of the inhabitants		
Previous training programs	0	0
By myself	15	12.5
From other co-workers	64	53.3
I did not learn	41	34.2
What is the most common problem faced while taking care of the inhabitants		
Non co-operation	25	20.8
Bites or aggressive behaviour	20	16.7
Cannot understand or communicate	40	33.3
Bad smelling mouth and bleeding gums	30	25
I don't know	5	4.2
Do you think oral health training can be helpful for you to deliver better oral care to the inhabitants		
Yes	90	75.0
No	20	16.7
Don't know	10	8.3
Which of the following do you think you need to be able to give better oral health care to the present group		
Audio video training	68	56.7
Hands on training	42	35.0
No training required	10	8.3

A lack of knowledge was felt when asked about when it is recommended to change toothbrush. More than 40% stated that when bristles are out of shape, whereas one in five had no idea about it. These results raise questions on the attitude of caregivers. Toothbrushes are considered as one of the vital tools in achieving acceptable plaque control and improving periodontal health (26, 33).

The present study revealed that no health care workers or caregivers took training in oral care. More than half of the caregivers learnt oral care training by other co-workers while 41% learnt oral training by themselves, though 75% of caregivers considered training in oral care useful. It was also observed that 80% of caregivers was educated until school level and 20% being less than that. This clearly shows that the current system of training and education is sub-standard and disappointing. Caregivers should be educated to a minimal level of standards and should have a homogenous guidance. These findings were concurrent

Table 4. Difference between caregiver's knowledge and attitude.

Variables	Mean ± SD	Mean Difference	P-Value	95% CI of the difference	
Caregivers Attitude	18.14 (6.7)	18.14	0.0001*	**Lower**	**Upper**
				16.91	19.36
Caregivers Knowledge	15.36 (1.94)	15.36	0.0001*	15.01	15.71

One Sample T test; *statistical significant.

Table 5. Oral health knowledge and attitude score of caregivers.

Variable	Adequate knowledge		Inadequate knowledge	
Knowledge	Frequency (n)	Percentage %	Frequency (n)	Percentage %
	71	59.2	49	40.8
	Good attitude		**Bad attitude**	
Attitude	Frequency (n)	Percentage %	Frequency (n)	Percentage %
	58	48.3	62	51.7

with the study reported by Sumi et al. (34). In addition, caregivers apparently assumed that better training and up to date oral health education would raise the quality of dental care and indirectly improve their attitudes (34, 35).

Overall, the study furnished relevant and useful information regarding oral health attitudes and knowledge of caregivers in Comprensive Rehabilitation Centre Al Kharj, Saudi Arabia. Although, oral health knowledge of caregivers was satisfactory, but the attitude score was relatively unsatisfactory. In order to improve oral health attitudes of caregivers, dental education plus training programs should be given high priority. Preventive techniques about basic oral health should be kept in pace with recent evidence. This implementation may indirectly improve oral health attitudes resulting in further improvement of oral status of the disabled. Lastly, more research should be done on this area, as previous data available is old and limited.

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