Oral and Dental Findings among Disabled People in Jordan

Awad Mousa El-Sumeirat [1]

Abstract

Objectives: To determine the prevalence of oral and dental problems among people with mental and physical disabilities, residents of welfare and rehabilitation center in Jordan.

Methods: This study was carried out in Jeresh welfare and rehabilitation center. Two hundred patients with mental and physical disabilities residing in that center were assessed for oral and dental health.

Results: plaque was seen by 88.5% of patients. Gingivitis with varying degrees was seen in 86.89% of disabled patients. Pulp involvement in at least one tooth was seen in 4.3% of disabled patients. Dental abscesses were present in 6.9% of disabled patients. The treatment history of the disabled patients during the last visit was 84.43% for check up, 6.56% for extraction, 1.64% for root canal treatment (RCT) and 7.37% for other treatments. Xerostemia was present in 48.3% of disabled patients. Halitosis was present in 78.8% of disabled patients. Food impaction between teeth was present in 76.1% of the disabled patient. Bleeding gums were encountered by 76.1% of disabled patients. Tooth wear was observed in 63.3% of the disabled patients. The status of oral health was poor with varying degrees in 86.90% of disabled patients. Drooling was found in 25.0% of disabled patients.

Conclusion: Disabled patients in Jordan had poor oral health. They had a high prevalence of dental problems including plaque accumulation, gingivitis, abscess, and missing teeth.

Keywords: Oral and dental findings, Disabled patients, Jordan.

(J Med J 2016; Vol. 50 (4):177-185)

Received	***Accepted***
May 22, 2016	*July 25 2016*

Introduction

Disability has been defined as the functional limitation within the individuals caused by physical, mental, or sensory impairments and can be developmental in origin or acquired[(1)]. It has been emphasized that people with developmental disabilities have experienced greater difficulty in securing health care than do people without disabilities. Intellectually disabled (or mentally compromised) people are subject to oral health problems as do people of normal intellectual health. However, the level of oral health of these disabled people is compromised with the fact that their learning process is impaired.

Studies have indicated that in spite of the high level of oral dental disease, individuals with disabilities or illnesses receive less oral care than the normal population[(2-4)]. Disabling conditions have many adverse health effects among which the most common is the inability

1. Ministry of Social Development, Amman, Jordan.

**** Correspondence should be addressed to:***
Awad Mousa El-Sumeirat,
E-mail: awad.smeerat@yahoo.com

of the individual to maintain oral health. The oral health of children and adolescents with special health care needs may be affected negatively by the medications, therapies or special diets they require, or by their difficulty to clean their teeth thoroughly on a daily basis. Oral health care is an important factor in the maintenance of good oral hygiene and can be difficult for the person with a disabling condition, as they often rely on others for assistance[5]. There is a particular risk from dentally unsafe dietary practices facing disabled children. Furthermore, many conditions and disabilities are associated with increased risk for various oral heath problems. Dental caries, periodontal disease and other oral conditions, if left untreated, are impairments that can substantially limit a child's development and an individual's participation in the main activities of life. Oral disease is a major health problem for people with disabilities[6].

Several epidemiological studies have shown that persons who are disabled have more oral health problems than the rest of the population[2-5]. No doubt that disability or illness can directly or indirectly increase the need for oral health care. It was found that individuals with mental/and physical disability received less oral dental care than the rest of the population in Nordic countries and this was due in part to inefficient recall systems and practical difficulties associated with treatment situations, treatment consisted mainly of extractions[7].

This study was conducted to investigate the oral dental problems among people with mental/and physical disability in Jerash welfare and rehabilitation center.

Methods

Study Design, population and setting

This study is a descriptive cross- sectional study among mentally and physically people. The population of this study included mentally-compromised and physically disabled people in Jordan. Jerash center for welfare and rehabilitation is the only center in Jordan that provides specialized treatment and rehabilitation for mentally and physically disabled people (males and females) of all Jordan and includes dental clinics that provide dental care. It has been established in 1991. The ages of the residents of the center are from 8 to 40 years old from all different districts of Jordan. This center has a maximum capacity of 230 patients.

Sampling Frame:

All mentally and physically compromised people resident in Jerash center for welfare and rehabilitation were chosen. Demographic characteristics of the study sample were collected. A total number of 200 mentally and physically compromised persons were residents in the center at time of the study. All these persons were examined for the purpose of this study. There are three types of disabled patients: cerebral palsy (71.0%), Down's syndrome (4.0%) and inheritance disease patients (25.0%). The ages of these patients are divided into the following age groups: less than 25 years (43.5%), 25-35 (32.0%), and 35 and above (24.5%).

Questionnaire:

A previously constructed questionnaire was used in collecting data. The questionnaire is composed of two parts: The first part of the questionnaire included general information about the study group: age, family history of disability, gender, place of birth, nationality, the age of mother during pregnancy, pregnancy period, type of pregnancy, medically diagnosis of disability, type and degree of disability,

reasons for disability, the number of family members, family income and source, social status of father and mother, educational level of father and mother and the degree of relativity between the parents. The second part included disability related information: Status of the disabled patient, status of teeth, plaque, status of gingiva, pulp involvement, presence of abscess, visit to dentist, xerostomia, halitosis, food packing between teeth, bleeding gum, teeth wearing and oral health.

Screening Procedure:

A standard oral dental unit in the oral dental clinic of the center was used for the assessment of oral dental problems. The patient was placed in the oral dental unit with good illumination and the dentist carried out a comprehensive oral dental examination for each patient.

Ethical Considerations:

The study was approved by the Ethical committee of JUST. Consents were difficult to obtain from patients in addition to that their parents are not always accessible. All the collected data were used for the purpose of this study only.

Data analysis procedure:

The data was analyzed using the Statistical Package for Social Sciences (SPSS, version 20). Frequencies and percentages were used to describe data. Chi- square and cross tables were used. T-test and analysis of variance were used to address the difference among study subjects according to their disability, familial, social, and educational status. The significance of association was tested at an alpha level of <0.05.

Result

Participant's Characteristics:

A total of 200 patients (49.2% males and 50.8% females) were included in this study. The majority of the participants (61.5%) were born in urban areas while the rest (38.5%) were born in rural areas. About 42.6% of patients were delivered at homes and 63.1% of patients were normal delivery. The participant's characteristics are shown in Table 1.

Table 1. Socio-demographic characteristics of 200 disabled patients

Variable		Number	Percentage %
Sex	Male	62	50.8
	Female	60	49.2
Place of birth	rural	47	38.5
	Urban	75	61.5
Place of delivery	Hospital	70	57.4
	Home	52	42.6
Period of pregnancy/ week	<41	97	79.5
	> 41	25	20.5
Type of delivery	Normal	77	63.1
	Abnormal	38	31.1
	Cesarean	7	5.7
Disability degree	Simple	2	1.6
	Mild	9	7.4
	Sever	111	91.0
Age	< 25	50	40.9
	25-35	38	31.2
	> 35	34	27.9

Table 2. Frequency distribution of clinical status among disabled participants (n=122) in Jerash welfare and rehabilitation center

Variable	Number	Percentage %
Plaque		
No	14	11.5
Little	71	58.2
Abundant	37	30.3
Gingivitis		
No	16	13.13
Mild	57	46.72
Moderate	37	30.32
Severe	12	9.83
Pulp involvement	5	4.3
Abscess	8	6.9
Xerostemia	58	48.3
Halitosis	93	78.8
Food impaction between teeth	89	76.1
Bleeding gums	89	76.1
Status of the disabled patient		
Allowed dentist to carry out dental examination	122	61.0
Did not allow dentist to carry out dental examination	78	39.0
Treatment during last visit		
Check up	103	84.43
Extraction	8	6.56
RCT	2	1.64
Other	9	7.37
Teeth wear	76	63.3
Oral health		
Very poor	54	44.27
Poor	52	42.63
Fair	14	11.47
Good	2	1.63
Drooling	30	25.0

Oral Health Characteristics:

As shown in Table 2, only 122 (63.9%) disabled patients allowed the dentist to carry out oral dental examination. About 11.5% of disabled patients had no plaque formation, 58.2% had little plaque and 30.3% of patients had abundant plaque. Mild gingivitis was seen in 46.72% of disabled patients, moderate gingivitis in 30.32% of disabled patients and severe gingivitis in 9.83% of disabled patients. Pulp involvement in at least one tooth was seen in 4.3% of disabled patients. Abscess was present in 6.9% of disabled patients. The treatment history of the disabled patients during the last visit was 84.43% for check up, 6.56% for extraction, 1.64% for root canal treatment (RCT) and 7.37% for other treatments. Xerostemia was present in 48.3% of disabled patients as it is assessed by the examining dentist. Halitosis was present in 78.8% of disabled patients. Food impaction between teeth was present in 76.1% of the disabled patient. Bleeding gums were encountered by 76.1% of disabled patients.

Tooth wear was observed in 61.0% of the disabled patients. The status of oral health was very poor in 44.27% of disabled patients, poor in 42.63% disabled patients, fair in 11.47% in disabled patients and good in 1.63% disabled patients. Drooling was found in 25.0% of disabled patients.

Table 3. Clinical status characteristics of disabled participants by age and their statistical significance (n=122)

Variable	< 25 years No. (%)	25-35 years No. (%)	> 35 years No. (%)	Total No. (%)	P Value
Plaque					
No	2 (4.0)	4 (11.8)	6 (15.8)	12 (9.8)	0.128
Little	36 (72.0)	18 (25.9)	18 (47.4)	72 (59.0)	
Abundant	12 (24.0)	12 (35.5)	14 (36.8)	38 (31.2)	
Gingivitis					
No	6 (18.8)	4 (11.4)	5 (13.9)	15 (12.3)	0.167
Mild	31 (60.8)	16 (45.7)	11 (30.6)	58 (47.5)	
Moderate	11 (21.6)	12 (34.3)	14 (38.9)	37 (30.3)	
Sever	3 (5.8)	3 (8.6)	6 (16.7)	12 (10.8)	
Pulp- involvement	0 (0.0)	2 (5.4)	3 (13.9)	5 (4.3)	0.312
Abscess	3 (7.1)	3 (7.9)	2 (5.6)	8 (6.9)	0.746
Xerostemia	23 (51.1)	14 (35.9)	21 (58.3)	58 (48.3)	0.136
Halitosis	30 (69.8)	33 (84.6)	30 (83.3)	93 (78.8)	0.189
Food packing between teeth	32 (71.1)	30 (78.9)	27 (79.4)	27 (79.4)	0.610
Bleeding gums	33 (71.1)	30 (78.9)	26 (74.3)	89 (76.1)	0.877
Treatment during last visit					
Check up	48 (88.9)	28 (82.4)	31 (91.2)	107 (87.7)	0.763
Extraction	4 (7.4)	3 (8.8)	2 (5.9)	9 (7.4)	
RCT	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
Other	2 (3.7)	3 (8.8)	1 (2.9)	6 (4.9)	
Drooling	16 (26.2)	16 (29.6)	8 (20.0)	40 (25.8)	0.571

Table 4. Teeth status by age and their statistical significance

Variable	Age in Years				P Value
	< 25 Mean (SD)	25-35 Mean (SD)	> 35 Mean (SD)	Total Mean (SD)	
Missing teeth	3.3 (7.9)	6.3 (8.0)	10.1 (9.0)	6.3 (8.6)	0.002
Decayed teeth	3.9 (2.9)	4.7 (6.9)	5 (5.6)	4.5 (5.2)	0.599
Filled teeth	0.6 (1.0)	0.8 (1.3)	1.0 (3.4)	0.8 (2.1)	0.609

As shown in Table 3, none of the pathologies or abnormalities was associated with ages.

The average number of missing teeth was 6.3 (8.6%). Number of missing teeth increased with increasing age (P=0.002). The number of

decayed teeth and filled teeth is shown in Table 4.

Discussion

It is fair enough to target the disabled patients by different studies because this group of people usually lives without enough concern. Even the basic needs are neglected. The importance of oral health among disabled patient comes from the fact that oral health is maintained through continuous cleaning of teeth using mechanical instruments like toothbrush. Disabled patients are not aware of their oral health and can not express their complaints and pains in a direct way. Furthermore, maintaining oral health is necessary to prevent other diseases like heart and gastric diseases. The maintaining of disabled health is a right which is overemphasized by law, humanity and religion. From economic point of view, maintaining oral health will save more expenses for other intervening treatments for oral cavity or other subsequent diseases.

This study was conducted to investigate the oral dental problems among people with mental/and physical disability in Jerash welfare and rehabilitation center.

The results of our study showed that factors involved within the clinical status were not associated significantly with age. These factors included plaque involvement, gingivitis, pulp involvement and abscesses. It can be extracted from these results that oral dental problems affect most of mentally retarded people at different age groups. Plaque formation and its health effects were discussed in literature. Some studies indicated that children with disabilities tend to have poor oral hygiene and plaque control, more gingivitis, and greater prevalence and severity of periodontal disease than normal children[8,9]. Other studies reported that children with learning disabilities have more plaque and greater severity of gingivitis than the general population; and these problems increase markedly with increasing age[10].

Our findings were consistent with reported findings in literature in which children and adolescents with cleft lip/palate are also at increased risk for gingivitis[11]. As previously mentioned, some studies showed that the prevalence of gingivitis increased with age[10].

Pulp involvement is usually reflected by oral dental caries which, in turn, is under the effect of dynamic process. This process leads to as either increase or decrease of oral dental caries. Tooth brushing and other means of tooth cleaning participate to that dynamic process. If the mental retarded patients are left without oral dental care, pulp involvement will progress over the time. It has been reported that oral dental caries is the most common disease of childhood. Oral dental caries is also the major cause of tooth loss in individuals with physical and mental disabilities[12]. It has been noted that disabled subjects have higher levels of caries, lower levels of care and a much higher proportion of untreated lesions but less treatment than the normal population[11]. Other studies showed that children with mild learning disabilities and children who are partly independent have been shown to have a high prevalence of dental caries[13].

Abscess formation is an inflammatory process and reflects other oral dental diseases as gingivitis and can be discussed in the context of these diseases.

Treatment requirements during last visit showed that oral dental treatments crossing different age groups were similar and maintenance of oral hygiene remains the outstanding challenge in the care of disabled patients. Physical and/or mental disabilities are known to compromise hygiene habits, including oral hygiene, either directly or indirectly. Furthermore, individuals with disabilities have been shown to have oral hygiene status with specific problems that affect their ability to perform oral hygiene; these problems include manual dexterity, coordination, self-help skills, and the ability to comprehend complex tasks[14, 15].

It has been reported that many individuals who are disabled find the maintenance of their own oral hygiene much more difficult than non-disabled individuals do. Because of the problems of motivation and manual dexterity, achievement and the maintenance of a high standard of oral hygiene and gingival health in disabled children and adults can be extremely difficult[16].

Finally, the present teeth was associated significantly with age (p value=0.002). The number of decayed and filled teeth was not associated significantly with age. This may be explained by taking into consideration that decayed and filled teeth may result from oral dental conditions which may reflect the general oral dental health conditions, while missing teeth may reflect trauma conditions in addition to similar conditions in relation to decayed and filled teeth. This is in line with other reported studies in literature in which it has been shown more prevalence of traumatic injuries in the disabled individuals than in normal children[18, 19]. It has also been reported that disabled children are a well-established group of children who need greater supervision and are more prone to traumatic injuries[20].

Conclusions

Disabled patients in Jordan had poor oral health. They had a high prevalence of dental problems including plaque accumulation, gingivitis, abscess, and missing teeth. Health facilities that concern with disabled persons should have an oral hygienist to supervise the oral health for disabled patients. To raise the capacity of employees in contact with disabled persons for maintaining the oral hygiene of disabled persons as well as the relatives of disabled persons through educational seminars.

References

1. Tesini DA, Fenton SJ. Oral health needs of persons with physical or mental disabilities. Dent Clin North Am. 1994; 38: 483-97.
2. Pezzementi ML and Fisher MA. Oral health status of people with intellectual disabilities in the southeastern United States. JADA. 2005; 136:903-912.
3. Hennequin M, Faulks O, Roux O. Accuracy of estimation of oral dental treatment need in special care patients. J Dent. 2000; 28: 131-136.
4. Nowak AJ. Oral dental disease in handicapped persons. Spec Care Dent 1984; 4: 66-69.
5. Casamassimo P. Bright futures in practice: Oral Health. Arlington, VA. National Center for Education in Maternal and Child Health. 1996.
6. Randell DM, Harth S, Seow WK. Preventive oral dental health practices of non-institutionalized Down syndrome children: a controlled study. J Clin Pediatr Dent. 1992; 16: 225-229.
7. Haavio ML. Oral health care of the mentally retarded and other persons with disabilities in

the Nordic countries: Present situation. Spec Care Dent. 1995; 15: 65-69.
8. Seymen F, Aytepe Z, Kiziltan B. Oral health status in children with Down syndrome. J Disabil Oral Health. 2002; 3: 62-67.
9. Mitsea AG, Karidis AG, Donta-Bakoyianni C, Spyropoulos ND. Oral health in Greek children and teenagers, with disabilities. J Clin Pediatr Dent. 2001; 26: 111-118.
10. Nunn JH. The oral dental health of mentally and physically handicapped children: A review of literature. Community Dent Health 1987; 4: 157-68.
11. Mitchell JC, Wood RJ. Management of cleft lip and palate in primary care. J Pediatr Health Care. 2000; 14: 13-19.
12. U.S. Department of Health and Human Services. Oral health in America: A report of the Surgeon General – Executive Summary. National Institute of Oral dental and Craniofacial research, National Institutes of Health, Rockville, MD, 2000a.
13. Storhaug K, Holst D. Caries experience of disabled school-age children. Community Dent Oral Epidemiol. 1987; 15: 144-149.
14. British Society for Disability and Oral Health. Guidelines for oral health care for people with a physical disability. London 2000; 1-9.
15. British Society for Disability and Oral Health. Clinical guidelines and integrated care pathways for the oral health care of people with learning disabilities 2001. Faculty of Oral dental Surgery, The Royal College of Surgeons of England, London. 2001; 1-56.
16. Brown JP. The efficacy and economy of comprehensive oral dental care for the handicapped children. Int Dent. J 1980; 30: 14-27.
17. Francis JR, Hunter B, Addy M. A comparison of three delivery methods of chlorhexidine in handicapped children. I. Effects on plaque, gingivitis, and tooth staining. J Periodontol. 1987; 58: 451-455.
18. Ohito FA, Opinya GN, Wangombe J. Traumatic oral dental injuries in normal and handicapped children in Nairobi, Kenya. E Afr Med J. 1992; 69: 680-682.
19. Denloye OO. Fractured anterior teeth among mentally handicapped school children in Ibadan, Nigeria. Afr Dent J. 1996; 10: 24-27.
20. Wei SH. Paediatric Dentistry: Total patient care. Lea & Febiger. 1988, p. 275-296.

وضع الصحة الفموية والسنية لدى الأشخاص ذوي الإعاقة في الأردن

عوض موسى السميرات [1]

1- مستشار في وزارة التنمية الاجتماعية، الأردن.

الملخص

هدف الدراسة: هدفت الدراسة لتحديد مستوى انتشار المشكلات الفموية والسنية لدى الأشخاص ذوي الإعاقة العقلية والجسدية والمقيمين في أحد مراكز الرعاية والتأهيل في الأردن.

الطريقة والإجراءات: تم إجراء الدراسة الحالية في مركز جرش لرعاية وتأهيل الأشخاص ذوي الإعاقة. وتكونت عينة الدراسة من (200) من الأشخاص ذوي الإعاقة العقلية والجسدية والمقيمين في المركز حيث تم إجراء تقييم بوضع صحتهم الفموية والسنية.

نتائج الدراسة: أشارت النتائج أن مستوى انتشار البلاك كان (88.5%) لدى جميع المرضى أفراد عينة الدراسة. وبينت النتائج أن مستوى انتشار التهاب اللثة ولكن بدرجات متفاوتة كان (86.9%). وكشفت النتائج أن مستوى انتشار نخر الأسنان كان لدى (4.3%). كما وبينت النتائج أن مستوى انتشار خراج الأسنان كان (6.9%). كما وأظهرت النتائج أن (84.43%) من الأشخاص ذوي الإعاقة كانوا يزورون طبيب الأسنان لمتابعة حالة أسنانهم، (6.56%) للقلع، (1.64%) لعصب الأسنان، (7.37%) للحصول على أنواع أخرى للعلاج. وكشفت النتائج أن (48.3%) من الأشخاص المعاقين كان لديهم جفاف فم، بينما كان (78.8%) من الأشخاص ذوي الإعاقة يعانون من رائحة الفم الكريهة. وبينت النتائج أن مستوى التباعد غير الصحي بين الأسنان كان واضحاً لدى (76.1%) من الأشخاص ذوي الإعاقة. وكشفت النتائج أن (76.1%) يعانون من اللثة النازفة. وبينت النتائج أن وضع الصحة الفموية لدى الأشخاص ذوي الإعاقة كان منخفضاً لدى (86.90%) وبدرجات متفاوتة. بينت النتائج أن نسبة سيلان اللعاب كان (25.0%).

الكلمات الدالة: وضع الصحة الفموية والسنية، ذوي الإعاقات، الأردن.