



# **Oral Health Related Quality of Life Among Libyan Adults.**

## **A Cross-Sectional Study**

**By**

**Roba Idris El-Refadi**

**Supervisor**

**Dr.Azza EL Saddiek Greiw**

**Co- Supervisor**

**Dr. Khadija Awad Herwis**

**This thesis was submitted in partial fulfilment of the requirements  
for Master's Degree of Community and Preventive Dentistry**

**University of Benghazi**

**Faculty of Dentistry**

**January 2018**

Copyright © 2018.All rights reserved , no part of this thesis may be reproduced in any form, electronic or mechanical, including photocopy , recording scanning , or any information , without the permission in writhing from the author or the Directorate of Graduate Studies and Training university of Benghazi .

حقوق الطبع 2018 محفوظة ، لا يسمح اخذ اى معلومة من اى جزء من هذه الرسالة  
على هيئة نسخة الكترونية او ميكانيكية بطريقة التصوير او التسجيل او المسح من دون  
الحصول على إذن كتابي من المؤلف أو إدارة الدر اسات العليا والتدريب جامعة بنغازي

University of Benghazi



Faculty of Dentistry

Department of Community and Preventive Dentistry

# Oral Health Related Quality of Life Among Libyan Adults A Cross-Sectional Study

By  
**Roba Idris El-Refadi**

This Thesis was Successfully Defended and Approved on **11.1.2018**

Supervisor  
**Dr. Azza EL Saddiek Hussein Greiw**

Signature: .....

Dr..... ( **Internal examiner** )

Signature: .....

Dr..... ( **External examiner** )

Signature: .....

(**Dean of Faculty**)

(**Director of Graduate studies and training**)

# **Dedication**

**To**

The memory of my dear father for being my first teacher.

**TO**

My mother for her support, encouragement, and constant love which sustained me throughout my life.

**Roba EL-Refadi**

## **ACKNOWLEDGMENTS**

Foremost, I would like to express my sincere gratitude to my advisor **Dr. Azza S H Greiw**, for the continuous support of my study and research, her patience, motivation enthusiasm, and immense knowledge. Her guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better advisor and mentor for my study.

My gratitude is extended to **Dr. Khadija Awad Herwis** for her continuous assistance, resourcefulness, help and constructive advice.

Besides my advisor, I would like to thank Dr. Hadeia Abdelhamed , Dr. Alagessia Samy and Dr. Azzam A Sultan, for their insightful comments, and support.

I would to like to express my gratitude towards my mother for her encouragement which helped me in completion of my research .my beloved and supportive, husband, Musa who is always by my side when I needed him the most, and to my lovable children, Rayan ,Mohammed and Yousef, who served as my inspiration.

**Roba I EL-Refadi**

## TABLE (List) OF CONTENTS

| <b>Contents</b>                   | <b>Page No.</b> |
|-----------------------------------|-----------------|
| Copyright © 2018 .....            | ii              |
| Examination Committee.....        | iii             |
| Dedication .....                  | iv              |
| Acknowledgements .....            | v               |
| List of Contents .....            | vi              |
| List of Tables .....              | vii             |
| List of Figures .....             | ix              |
| List of Abbreviations.....        | x               |
| Abstract.....                     | xi              |
| Chapter 1.....                    | 1               |
| Chapter 2.....                    | 13              |
| Chapter 3.....                    | 14              |
| Chapter 4.....                    | 18              |
| Chapter 5... ..                   | 45              |
| Chapter 6.....                    | 49              |
| References .....                  | 51              |
| Appendices.....                   | 57              |
| Abstract in Arabic Language ..... | 58              |

## List of Tables

| No | Tables  | Page |
|----|---|------|
| 1  | <b>Descriptive statistics of physical effects of the oral health of the participants, Benghazi -2011</b>              | 23   |
| 2  | <b>Descriptive statistics of Psychological effects of the oral health of the participants, Benghazi - 2011.</b>       | 25   |
| 3  | <b>Descriptive statistics: of Social effects of the oral health of the participants, Benghazi 2011.</b>               | 27   |
| 4  | <b>Comparisons of physical effects of oral health of participants, by gender Benghazi - 2011.</b>                     | 29   |
| 5  | <b>Comparisons of psychological effects of oral health of participants, by gender Benghazi – 2011.</b>                | 30   |
| 6  | <b>Comparisons of Social effects of oral health of participants, by gender Benghazi - 2011</b>                        | 32   |
| 7  | <b>Comparisons of physical effects of oral health of participants, by age groups Benghazi - 2011</b>                  | 34   |
| 8  | <b>Comparisons of psychological effects of oral health of participants, by age groups Benghazi - 2011</b>             | 35   |
| 9  | <b>Comparisons of Social effects of oral health of participants, by age groups Benghazi - 2011</b>                    | 36   |
| 10 | <b>Comparisons of physical effects of oral health of participants, by educational attainment Benghazi - 2011</b>      | 38   |
| 11 | <b>Comparisons of psychological effects of oral health of participants by educational attainment, Benghazi - 2011</b> | 39   |

|    |   |    |
|----|---|----|
| 12 | <b>Comparisons of social le effects of oral health of participants by educational attainment, Benghazi - 2011</b>                                 | 40 |
| 13 | <b>Comparisons of physical effects of oral health of participants by type of the clinic (private –governmental) setting, Benghazi – 2011</b>      | 42 |
| 14 | <b>Comparisons of psychological effects of oral health of participants by type of the clinic (private –governmental) setting, Benghazi - 2011</b> | 43 |
| 15 | <b>Comparisons of social effects of oral health of participants by type of the clinic (private –governmental) setting, Benghazi - 2011</b>        | 44 |



## List of Figures

| No               | Figures  | Page |
|------------------|--|------|
| <b>Figure 1:</b> | Distribution of the participants by gender, Benghazi :2011     | 20   |
| <b>Figure 2:</b> | Distribution of Libyan adult by age                            | 20   |
| <b>Figure 3:</b> | Distribution of Libyan adult by the type of the health setting | 21   |
| <b>Figure 4:</b> | Distribution of Libyan adult by education attainment           | 21   |

## List of Abbreviations

|         |  |
|---------|--|
| (OHQoL) | Oral Health-Related Quality of Life    |
| (WHO)   | World Health Organization              |
| (GOHAI) | Geriatric Oral Health Assessment Index |
| (OHIP)  | Oral Health Impact Profile             |
| (BMS)   | Burning Mouth Syndrome                 |
| (QoL)   | Quality of Life                        |

# Oral Health Related Quality of Life Among Libyan Adults. A Cross-Sectional Study

By  
Roba Idris El-Refadi

Supervisor  
Dr. Azza EL Saddiek Hussein Greiw  
Co- Supervisor  
Dr. Khadija Awad Herwis

## ABSTRACT

**Background:** In Libya, assessments of oral health needs were entirely based on traditional clinical measures which failed to identify the perceived impact of oral disorders within population. **Objectives:** This study intended to study the association of Oral Health Related Quality of Life (OHQoL) and some of the demographic factors and to reveal out the effect of oral health on the life of Libyan adults among Libyan adults accessing private and government health services.

**Subjects and Methods:** A random sample of 778 adults aged 18-65years, from the outpatient department of private and governmental clinics/hospitals in Benghazi, were subjected to structured questionnaire comprising the Arabic version of the UK-Oral Health Related Quality of Life (OHQoL-UK).

**Results:** 63.5% of the participants were females, 36.5% were males. Mean age of the participants were 35 SD±12 years.53.1% of the respondents were from private clinics and hospitals, while 46.9% were from governmental hospitals.Females have been effected more than males in social aspects; marriage, ability of work and finance.. There were no significance differences between both clinical setting attainders regarding physical, psychological and social aspects.

**Conclusion:** The present research found that Libyan adults do not perceive many effects and only perceive moderate impact on their lives, as influenced by oral health. The present study also found that the demographic characteristics of gender influenced their perceptions of effects and impact on oral health.

# INTRODUCTION

## **Introduction**

The notion that the viewing of the mouth to be separated from the rest of the human body has been gradually diminishing over the years as evidence suggests how oral health can have a considerable impact on general health.<sup>(1)</sup> When oral diseases are experienced, pain and suffering are brought about, hence, creating significant changes on individuals' food and eating patterns, speech, overall wellbeing, and their quality of life. Oral health can also have an impact on the development of chronic diseases.<sup>(2)</sup> Due to the ineffectiveness to identify and confront social and material contributors to oral health as well as failure to integrate oral health into the promotion of general health, millions around the world suffer from the symptoms and effects of oral diseases, hence, reducing their quality of life.<sup>(3)</sup> Oral diseases have been reported to be a very common chronic diseases and remain to be a critical health problem for the public due to its wide prevalence, effects on individuals and the community, as well as the costs of dental treatment. Determinants of dental diseases commonly include hygiene, smoking, alcohol intake consumption , serious injuries, as well as stress.<sup>(1)</sup>

In a number of countries, particularly in low income countries , oral diseases have become one of the most costly conditions to treat.<sup>(4)</sup> Consequently, aside from oral diseases' impact on costs, the patients' quality of life is considerably affected as well. Oral health can affect human beings in both a physical and psychological manner; therefore, it can influence growth, satisfaction, enjoyment, speech, taste, socialization along with their overall wellbeing.<sup>(5)</sup> The occurrence of pain, discomfort, infections, disruption in eating and sleeping patterns and a greater risk for treatment and hospitalization can all diminish quality of life.<sup>(6)</sup>

Health education services were first developed in the past three decades and have been improved over the years. Organizations for health and social welfare hold the main responsibility to provide programmes that foster public health and education. Formal and informal methods are utilized to communicate health issues and the need to effectively respond to such concerns. In particular, the World Health Organization (WHO) is highly involved for the planning and assessment of oral health programmes.<sup>(5)</sup>

A Report stated that proper oral health care in the Eastern Mediterranean region, such as in Libya, is not adequately provided to children and adults compared to other countries. In the public sector oral health care is provided with health measures including regular examinations, vaccinations, and treatment services.<sup>(7)</sup> In Libya, health education programmes are aimed to provide the society members with the opportunity to gain health awareness and to take on voluntary change , such as providing relevant information to assist individuals in making certain decisions regarding their health.<sup>(7)</sup>

In Libya, progressive decay and periodontal diseases were reported to be the most prevalent conditions among children and adults alike. It was also confirmed by the WHO that such the prevalence of dental caries have been continuously increasing and the number of patients with periodontal diseases remain at a high level. <sup>(7)</sup> On the other hand, in more developed countries the rates of such conditions are being reduced to either moderate or low rates.<sup>(5)</sup> Thus, this study focus on how oral health can affect the quality of life of adult people living in the Benghazi.

**REVIEW  
OF  
LITERATURES**

## **Review of Literature**

Contemporary notions of health have suggested that oral health can be defined through its impact on physical, social, and psychological wellbeing .<sup>(8)</sup> It has also been asserted that dentistry's largest contribution to human beings is its ability to enhance quality of life. Oral health issues that severely disrupt the physical, social, and psychological functioning of individuals are critical concern when evaluating oral health. Chronic diseases including caries, obesity, and diabetes have been associated with oral health, hence affecting overall health and quality of life.<sup>(5)</sup>

Due to the fact that oral diseases and other severe conditions are influenced by common factors, which should be determined.<sup>(9)</sup> The integration of oral health into the current strategies for the promotion of general health, will lead to positive effects on oral and overall health. The following review of related literature will delve into the importance of oral health and its impact on the quality of life particularly in physical, psychological, and social functioning through the framework proposed by Bedi and McGrath .<sup>(10)</sup>

### **2.1. Oral Health: An Overview**

Reports on oral health have focused on how to communicate the complete meaning of oral health and its significance to overall health and wellbeing. Oral health includes the functioning of teeth and gums as well as supportive parts from tissues and ligaments to the throat and jaws.<sup>(11)</sup>

Meanwhile, new evidence had pointed out the relationship between oral diseases and severe lung and heart diseases, low birth weight, and untimely birth delivery. Periodontal diseases have also long been linked



to diabetes. Therefore, oral cavity and health should not be considered as two separate entities as they are interconnected. According to the WHO, health does not merely refer to the absence of sickness; rather, it also points toward the overall state of physical, psychological, spiritual and social wellbeing of individuals. Consequently oral health should also emphasize overall wellbeing.<sup>(12)</sup> Oral health remains to be an important component of general health and should be incorporated in health care provision and design of health programmes for the community. However, despite the attempts to communicate the complete concept of oral health to the public, dental conditions such as tooth decay and periodontal diseases remain at a high level for many countries, affecting almost every individual at some point during their lifetime.<sup>(13)</sup>

The importance and management of overall health have been evident particularly through preventive measures among communities, which had achieved reduction of oral diseases severity and prevalence. However, despite the efforts of oral health professionals, not every country has experienced a similar level of improvement.<sup>(14)</sup> What has been considered as a silent endemic of oral infections and diseases continue to adversely affect a number of population groups, thereby restricting their activities at home, school, and work as their quality of life is diminished.<sup>(15)</sup> During the beginning of the 20th century, it was expected that most human being will lose their teeth when they reach the age of forty five. However, such expectations have not been fulfilled as relevant information had been attained and active measures have been taken over the previous decades to effectively maintain oral health. For instance, research indicates that people who drink from fluoridated water supplies have less dental cavity than those who do not.<sup>(16)</sup> Flouridation of water increases the resistance of hosts thus decreasing and / or eliminating

bacterial infections. Such evidence allowed experts to recognize that prevention is an essential mean for maintaining oral health in the public. Oral science and its application on strategy development for oral prevention and treatment have made significant contributions. The utilization of information and strategies has consequently led to the improvement of quality of life among dental patients.<sup>(17)</sup> Efforts in lifestyle changes as well as support of community programmes that promote oral health ,play a critical role to reduce oral diseases and improve the well-being and satisfaction of individuals.

## **2.2. Oral Health in Libya and the Eastern Mediterranean Region**

A research conducted in Libya to examine how halitosis and other related diseases along with their oral practices can affect the quality of life among office workers. Halitosis around the world has been shown to cause discomfort, low self-esteem, and embarrassment, hence the need for professional treatment and care.

The study selected a sample of 600 Libyan students and employees with which only 498 were able to successfully complete the questionnaires for measuring the impact of halitosis, related conditions, and oral health practices, on their quality of life. 44% of the men and 54% of the women perceived that they have oral malodour with which only 14% males and 13% females have been examined by their dentists for malodour while 9.6% were able to obtain dental treatment. More females brushed their teeth frequently than males and the use of mouthwash and dental was very much less frequent compared to the use of toothpicks although toothpicks did not guarantee good breath upon waking up. Dry mouth was also more common among males who were smokers. All in all, bad

breath was shown to have a distressing impact on both males and females which can eventually turn them into social handicaps, thus restricting them from establishing social interactions. Such interference with their social lives have also led to the reduction of their self-esteem and has increased their levels of anxiety. Being self-conscious due to self-perceived malodour was also common.

A study conducted in Jordan attempted to characterize the status of oral health among young and old populations. Reported that there is an increasing prevalence of dental caries and periodontal diseases this rise in the prevalence could be attributed to the type of diet that is incorporated into their daily routine such as consumption of foods made up of refined carbohydrates and sugar as well as sweet drinks.<sup>(19)</sup>

Cyprus, in the Eastern Mediterranean region, also faces dental issues with which dental caries are the most common form of oral conditions for individuals twelve to forty four years of age.<sup>(20)</sup> Health education programmes generally include oral health awareness and oral health care are entitled, free of charge, to school children, government workers, low-income earners and finally people with special needs. Hence, such findings indicate how Libya and its surrounding countries in the Eastern Mediterranean region have been experiencing oral health concerns that require full attention and effective responses.<sup>(20)</sup>

### **2.3. Effects of Socio-Demographic Factors on Oral Health**

Tooth brushing is known to be the most common and reliable means to control plaque and maintain effective cleaning. Oral hygiene habits have been reported to differ in terms of gender.

More females regularly brush their teeth compared to males whereas a higher number of males and only a small number of females overlooked

the habit of brushing. Moreover, plaque and other oral concerns were at a higher rate among males than in females.<sup>(21)</sup>

Children and adolescents who attended private schools tend to frequently brush their teeth compared to those who went to public institutions.<sup>(22)</sup> A larger number of public school students were shown to brush irregularly compared to those of private schools. Plaque and gingival concerns were also higher in public schools. Individuals belonging to 'wealthy' families were shown to have a higher frequency of brushing than those of 'poor' and 'very poor' families.<sup>(22)</sup>

A study in conducted Finland among adults aged thirty and above, showed that oral impacts can be influenced by age, educational level, and number of teeth. Perceived impaired oral health was more evident among those of older age, lower levels of education, and have more occurrences of tooth loss. Younger participants who had lower levels of education were shown to experience more oral problems. Moreover, among older individuals, no relationship was positively shown between level of education and its impact on oral health.<sup>(23)</sup>

In London a study done to identified the effects of educational level on oral health-related quality of life among adults, aged 65 years or older. The most common problem was eating discomfort as well as concerns regarding their appearance. Low educational level was shown to have a negative impact on the quality of life among adults, thus the study suggested that oral health-related policies target lower educated groups to reduce inequalities in oral health.<sup>(15)</sup>

A study showed that unemployment can influence oral health care utilization. Their study made use of data that included dental visits and unemployment rates in the United States and primarily indicated that

community-level unemployment can be linked to a decreased use of dental care services to prevent dental issues in a population that is dentally insured. Authors found that the number of unemployed individuals increases, the number of preventive visits is decreased; thus, the analysis implied that the use of preventive dental care can be reduced when community-level of unemployment is increased. This unemployment can restrict or hinder a group or population from using preventive dental services.

A study conducted in Sweden among adults aged fifty to sixty years old about their satisfaction with their teeth. Authors found sixty three percent of the women and sixty six percent of the men were found to be satisfied with their teeth. Although education and country of birth, which both reflected social status in early life greatly, varied among the participants, and did not have a significant impact on the satisfaction of adults regarding their teeth. Nonetheless, many participants of lower educational levels, with more occurrences of tooth loss, and highly active smokers were dissatisfied with their teeth. Country of origin, as a social factor, may also be a contributing factor to oral health perceptions. Moreover, such perceptions can be well-established before adults reach their fifty's. A healthy adult lifestyle along with smoking cessation and effective oral care was recommended for tooth retention and prevention of symptoms. Consequently functional limitations will be reduced such as not being able to talk or chew properly. <sup>(26)</sup>

#### **2.4. Influence of Oral Health on Quality of Life**

Oral health has been attributed to overall health, sense of wellbeing, even physical appearance as well. <sup>(27)</sup> Periodontal diseases, bacterial infections in the mouth, and other oral diseases can be contribute to critical conditions, such as respiratory conditions, diabetes, or heart problems. A

Study linked poor oral health to low birth rates and pre-term birth delivery.<sup>(28)</sup> Untreated oral conditions often cause pain and distress to an individual and can further lead to severe infections. To maintain good oral health is of paramount importance as poor oral care has been shown to greatly affect chewing abilities and proper food digestion. It has been associated with sleeping problems and increased levels of anxiety and has reduced self-esteem and confidence in one's appearance.<sup>(29)</sup> Oral health is important to maintain at all life stages, especially during early years of teeth development. It also plays a significant role among older adults who, may have limited access to dental care services and oral health professionals due to a lower level of income.<sup>(30)</sup> Older adults, most especially were at a high risk of complications brought about by poor oral health due to frailty, weak health or an increasing dependence on other people for their own personal care<sup>(31)</sup>

## **2.5. Framework (Bedi and McGrath)**

Many oral diseases do not necessarily act as severe factors that can pose life-threatening risks to individuals. Nonetheless, the outcomes of such conditions can have a considerable impact on the overall wellbeing of individuals and groups. The Oral Health-Related Quality of Life (OHRQoL), defines the perception of an individual regarding his / her oral health and its outcomes on his/ her wellbeing and life quality.<sup>(32)</sup> Measuring the OHRQoL has driven numerous professionals from the health sector to come up with appropriate instruments and measure life quality. The instrument to measure OHRQoL of Bedi and McGrath (2001),<sup>(32)</sup> was developed based on perceptions of the community in the United Kingdom regarding the impact of oral health on life quality. Sixteen questions were developed to examine the dimensions of oral health-related quality of life, including speech, comfort, and social life

whereas another set sixteen of questions were developed to assess oral health' influence on overall life quality. This instrument has been previously subjected to test its reliability and was found to be valid for evaluating OHRQoL; its psychometric properties were also found to be consistent. Bedi and McGrath's (2001) tool for measuring OHRQoL consisted of the effect dimension (physical effects, psychological effects, and social effects) along with the impact dimension (impact on everyday activities, ability to chew, and ability to talk to people).<sup>(10)</sup>

## **2.6. Effect Dimension (Physical, Psychological, and Social Effects)**

The process of speech and swallowing, for instance, has been linked to oral cancer with which its effects are highly dependent on a lump's location or size. A sore or lump that develops on the lip can restrict its movement, consequently hampering the patient to produce speech sounds such as the 'p' or 'm'. When lips are unable to move effectively, it can reduce the ability of the person to hold food inside the mouth while eating. Moving food around the mouth and pushing it through the throat will also be hampered. Moreover, sore or lump growth on the mouth's roof can often change the person's voice quality.<sup>(33)</sup> Smell and odour also play a fundamental role for social. To have oral malodour can be considered offensive to friends, partners, colleagues, and other acquaintances. Breath, regardless of whether it is good or bad, remains to be a component in an individual's connectedness to his / her surroundings; it also brings about physical, emotional, psychological, and social effects that can be considered pleasant or undesirable depending on the varied tolerance levels of other people.<sup>(34)</sup> Bad breath can considerably lower the individual's confidence and self-image, and can have an adverse impact on the affective nature of relationships. Because

bad breath can highly produce affective responses, the surrounding people may demonstrate negative body language and other defensive strategies, hence reducing self-esteem and the quality of relationships.<sup>(34)</sup> Changes in physical appearance, chronic / acute pain, depression, difficulties in sleeping, and guilt of placing financial burdens on one's family / loved ones are also often experienced during the occurrence of oral diseases. Patients of oral diseases also experience feelings of shame and guilt that can be linked to their previous use of tobacco; they also feel conscious considering the disfiguring results of oral diseases and the necessary treatment that come with it, hence there will be considerable reduction of life quality.<sup>(35)</sup>

## **2.7. Measurement of Oral Health and its Impact on Life Quality**

Measurement for evaluating oral health aimed to determine the outcomes of oral conditions on the overall wellbeing of individuals, particularly their functional, social, and psychological effects. Aside from the widely known OHRQoL, a number of researchers have also developed other means of oral health measurement.<sup>(26)</sup>

The Geriatric Oral Health Assessment Index (GOHAI) by Atchinson,<sup>(36)</sup> serves as an instrument for measuring patients' reports of oral functional problems; it is mainly used for determining the level of psychosocial effects brought about by oral diseases and evaluating the effectiveness of the appropriate dental treatment. The GOHAI included; description of oral health as defined by the patients such as experience of pain infection and their ability to carry on with the social roles they desire to assume.<sup>(36)</sup>

The Oral Health Impact Profile (OHIP)<sup>(37)</sup> has also been identified as an alternative to determining the dimensions of the OHQoL as it is known to



be one of the most frequently used instruments for evaluating OHQoL. This conceptual model was originally based on the WHO's International Classification of Impairments, Disability, and Handicaps<sup>(38)</sup>

In 2001, the (WHO) developed the International Classification of Functioning, Disability and Health which has also been used as a framework for identifying, classifying, and measuring disability. It helps identify the impact of oral health on wellbeing.<sup>(39)</sup>

Furthermore, the Subjective Oral Health Status Indicators were developed, to identify the functional, psychological, and social outcomes of oral health conditions and disorders, hence the later considered examination of the relationships between oral diseases and overall health.<sup>(40)</sup>

A study aimed to translate and assess the measures of the (OHQoL) initially conducted in the United Kingdom, using an Arabic version of the OHRQoL (UK), questionnaires which was distributed to various sites in three countries (Syria, Egypt, and Saudi Arabia) . The structure aimed to demonstrate that quality of life can be related to socio-demographic factors as well as self-reported oral health. Findings indicated that differences in OHRQoL scores were evident among participants and supported the relation of socio-demographic factors and self-rating or oral health with life quality. Thus, the validity and reliability of the Arabic version of the OHRQoL were shown to be acceptable in measuring the life quality in relation to oral health. Moreover, aside from its adequate psychometric properties, the Arab OHRQoL can also be applied in cross cultural research.

The Dental Impact Profile had been developed, to determine the effects of oral health and oral structures on the quality of life, indicating the

importance of teeth to a single person or to the entire population. It has also been suggested that it reflects the cultures and experiences of different racial and ethnic groups regarding their level of importance in association with oral health.<sup>(33)</sup>

## **2.8. Empirical Studies**

The following empirical studies aimed to confirm how specific oral health and conditions can have a considerable impact on adults and their quality of life.

A study among patients who have the Behcet's disease and active oral ulcers showed that psychological discomfort, such as being self-conscious and tense because of their mouth's condition, was the most affected dimension of life quality. Physical pain was also evident as participants reported that they were very uncomfortable when eating most foods and constantly experienced pain in their mouth. Unsatisfactory diet was also indicated as an outcome of having oral diseases along with the trouble of pronouncing words, as well as causing embarrassment for them due to such problems. All in all, the occurrence of oral disease can lead to negative perceptions of life quality by diminishing physical functions, social functions, and self-esteem. Thus, eliminating pain caused by oral diseases may bring about improvements to overall quality of life.<sup>(42)</sup>

A study conducted on oral health problems, specifically the Burning Mouth Syndrome (BMS) and its impact on the patients' quality of life. showed that psychological disability, physical pain, and psychological discomfort were the most affected dimensions of life quality among patients with BMS. Other dimensions such as social and physical disability were also evident among them. The researchers suggested that

improvements are necessary to develop the most appropriate strategies that are specifically aimed to enhance the patients' quality of life.

A study focused on Jordanian patients who were referred for orthognathic treatment and how it affected their quality of life. Findings showed that functional limitations were common among the Jordanians such as speech problems and communicating with others. Social interactions have also been limited due to the self-consciousness and embarrassment that patients felt regarding their dentofacial condition. In addition, psychological discomfort, physical ability, and functional limitations were the most affected dimensions of life quality.<sup>(44)</sup>

Similarly, Jordanians with dentofacial deformities and their perceptions of life quality were the focused in a study ,aimed to determine how dentofacial conditions and the appropriate treatment can influence the quality of life among Jordanian patients. Using a case control study, 143 subjects were chosen as a sample; 36 before undergoing surgery, 35 after the treatment, 35 who postponed or declined the treatment and 37 other control subjects. Findings showed that those who underwent orthognathic surgery were most satisfied compared to the other groups. Dimensions for psychological and physical abilities were at an increased level while their functional limitations were reduced. On the other hand, those who have not been able to experience the treatment perceived lower levels of life quality such as speech; communication problems and hindrances in social interactions due to physical appearances. This suggested that patients who have dentofacial deformities when provided with appropriate treatment, can improve their perceptions on life quality particularly when their needs / desires to eliminate or reduce physical and psychological limitations are fulfilled.<sup>(45)</sup>

The study aimed to investigate the impact of being partially dentate on chewing abilities and the overall quality of life. An immediate and significant functional outcome of majority of oral disorders is the reduction of one's ability to chew. Chewing abilities can influence dietary options, eating patterns, and intake nutrition, thereby influencing general health.<sup>(46)</sup>

The study was carried out among partially dentate patients at a medical and dental university prosthodontic clinic and completed a questionnaire on how their current state has been affecting their chewing abilities and overall quality of life. Their perceived chewing ability was found to be significantly related to their quality of life, with which such correlation was affected by educational level, demand for treatment, and denture, conversely not effected by age or the number of retained teeth. Psychological discomforts, particularly being self-conscious, was the most affected dimension of their OHQoL followed by functional limitation (difficulty pronouncing words; a worsened sense of taste), physical pain (uncomfortable to eat most foods; painful aching in mouth), and less satisfaction in life. This suggests that experiencing oral disorders among patients can affect their perceptions of their ability to chew which, in turn, can influence their overall quality of life.<sup>(46)</sup>

Reference in 2010 focused on one of the most common dental concerns, tooth loss, and its impact on quality of life. Tooth loss is considered as both a functional and aesthetic problem for those who have experienced it. Tooth decay and lack of treatment has been constantly linked to tooth loss while other oral conditions such as periodontal disease have been associated with it. As a search strategy, relevant databases had been searched to find papers from 1990 to 2009 that can provide important information on tooth loss and life quality while selected studies had also

been grouped based on the OHQoL instrument. Out of 924 relevant references, only 35 were used for the study. Through the meta-analysis of 10 studies that focused on 13 various samples, outcomes showed that all studies presented a significant correlation between tooth loss and quality of life. Majority of the studies indicated that tooth loss brought about both functional limitations (difficulty speaking; communication problems) and psychological discomfort (self-conscious about teeth/appearance). Physical disabilities were also evident due to the inability to chew food properly, thus dissatisfaction over one's diet. The researchers concluded that there is relatively strong evidence which points out the relationship between tooth loss and the decline of OHRQoL particularly with regards to the tooth loss distribution.<sup>(47)</sup>

A study conducted on Libyan adults, studying the growth of inflammatory and developmental odontogenic cysts and its impact on life quality. Findings showed that radicular cysts were most common in Libya, especially among males. Quality of life was significantly affected particularly through the physical pain and discomfort that the cyst growth brought upon the patients. Levels of anxiety and stress were increased while decreased levels of life satisfaction were also reported; hence psychological discomfort was also common.<sup>(48)</sup>

**AIM  
OF  
THE STUDY**

## **Aim of The Study**

### **3.1. General objective**

-To assess the impact of oral health on the quality of life among Libyan adults.

### **3.2. Specific objectives**

1. To describe the demographic characteristic of Libyan adults.
2. To study the association of OHQoL and some of the demographic factors.
3. To reveal out the effect of oral health on the life of Libyan adults.

# **SUBJECTS AND METHODS**



## **Subjects and Methods**

### **4.1. Study design**

A descriptive, cross-sectional research design based on structured close-ended questionnaires was carried out to fulfill the aim of the study.

### **4.2. Study setting**

The study was conducted in Benghazi, the second largest city in Libya.

### **4.3. Population and the sampling**

The target population was Libyan adults aged 18-65 years, attending private and governmental health care setting in Benghazi.

A list of the private clinics and governmental hospitals were obtained from the Ministry of Health in Benghazi. At the time of the study there were forty seven private clinics and seven governmental hospitals providing services for adults. Simple random technique was used to select the health care settings. Twelve private clinics and two governmental hospitals were selected according to geographical distribution to conduct the study. The systematic random method was used to select the participants from the selected health care settings. A total of 778 participants were selected during the period of the study. The participants were hospital /clinics visitors and they were briefed about the purpose, process of the study. Visitors who were willing to participate were included in the study, and those who refused were replaced by others according to systematic random method. Interviews were conducted at quite corner in the waiting area of the medical outpatient clinics. Participants were well informed that the information

they provide will be held private and all precaution's had been established to protect the confidentiality of their response.

### **4.3.1. Inclusion criteria**

All adults aged 18-65 years and were willing to participate in the study and were free from acute oral problems.

### **4.3.2. Exclusion criteria**

Individuals younger than 18 years and older than 65 years and who were seeking dental treatment were excluded, as the aim of the study was to assess the impact of (OHQoL) in an adult population with no acute oral problems in order to obtain a baseline picture of oral health needs and priorities.

## **4.4. Operational procedures**

### ***4.4.1. Study period***

The study conducted over a period of twelve months; Two months preparation of the questionnaire and pilot study, six months collection of data ,and four months analysis of data and writing process.

### ***4.4.2 .Study tools***

An interview questionnaire was used to collect the required data in the waiting room in each clinical setting to protect participants confidentiality and make them more comfortable.

The researcher first introduced herself to the participants and explained the purpose of the study in order to ensure their cooperation also clarified some unclear points for them.

### **4.4.3 Questionnaire**

The questionnaire had two sections:

**Section I** which was a closed –ended questionnaire, It included: Demographic profile (gender, age, employment status, educational attainment and the kind of the health setting) .Education attainment were classified into three categories; low (illiteracy and primary school) medium (preparatory and secondary school) high (university and higher education).

**Section II:** Consisted of 16 self-completion questions seeking information on the OHQoL. The original version of the OHQoL-UK© developed by McGrath and Bedi (2002) had been obtained with kind permission from McGrath for research and educational purpose use only and not intended for any commercial activities. Close-ended questions were used, each of which having fixed answers. The respondents were to choose from, 5-point Likert scales that is used to gauge the effect statements, with the following substantive interpretations: 5 – very good; 4 – good; 3 – not much; 2 – bad; and 1- very bad. The middle rating interpretation has been changed from “none” to “not much” since this is more descriptive of a neutral status on the effects of oral health. The following mean ranges were used for interpretation:1.00-1.49-verybad;1.50-2.49-bad;2.50-3.49-none;3.50-4.49-good;and 4.50-5.00-very good. (**Appendix I**)

### **4.4.4. Translation**

Both the first and second sections were translated from English to Arabic by two dentists who were bilingual and fluent in both English and Arabic. Psychometric properties of the questionnaire were tested by back translation into English by

another two bilingual dentist fluent in both Arabic and English. The back translated version was compared with the original English version to verify that the questions were properly translated and culturally acceptable. A key concern of the translation related to conceptual equivalence of the phrase (romantic relationships) was considered culturally inappropriate to use, instead the term "marital relationship" was agreed upon to provide conceptual equivalence of the term rather than the direct verbal equivalence. Translated items were worded carefully to match with the original text and were comparable in their meaning.

#### ***4.4.5. Pilot study***

The Arabic version of the study questionnaire was pilot tested by a group of 10 hospital visitors to confirm clarity and comprehension of the information. Individuals were asked to complete the questionnaire, and give their comments about the questions. Notes and feedback of the participants were taken. Questions were easy to understand with no difficulty; also the time required was about 10-15 minutes which was suitable for the participants.

#### ***4.4.6. Ethical consideration and Approvals***

The questionnaire was anonymous to gain participants' trust and confidence as well as to encourage them to respond very well to the questionnaire. Verbal consent was obtained from the participants.

The approval of the research committee of the Faculty of Dentistry Benghazi University was first obtained. The Ministry of Health, Benghazi Libya, and heads of all private clinics and public centers were also contacted and their approvals were obtained.

### **4.5. Statistical analysis**

Each questionnaire received an individual identification number to permit checking for any inconsistent responses. All questionnaires were included and the data was entered on Microsoft office Excel 2013 database and checked for entry errors than coded. The statistical Package for Social Science version 17 (SPSS Inc. Chicago, IL, USA) <sup>(49)</sup>, was utilized for statistical analysis of the results. Descriptive statistics were displayed as frequencies and percentages for qualitative variables. In addition, chi-square test was used to determine if there was a significant relationship between oral health seeking behaviors and these effects and outcomes, justifying the comparative nature of the study. Such a feature of the research design aimed to ascertain if there were significant differences between participant's demographic characteristics and their OHRQoL.

# RESULTS

## **Results**

The study included 778 participants who were attending the selected clinics. The results will be presented in two sections:

**Section I:** The demographic profile of the participants.

**Section II:** the overall results on the OHQoL subscales, and the relationship between some of the demographic factors and the effects and impacts of oral health on their quality of life.

### **5.1. Section I: Demographic profile of the participants.**

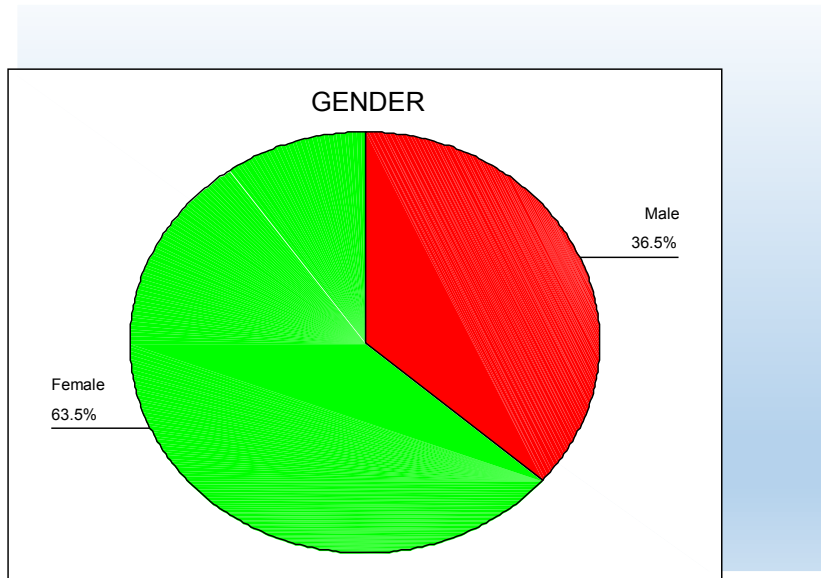
Figure 1 showed that less than two third (63%) of the participants were females and 36% were males.

Figure 2 revealed that more than half (58%) of the participants aged 25-45 years, nearly quarter (24.8% ) aged 18-24 years ,and 16.5% of them were above 45years.

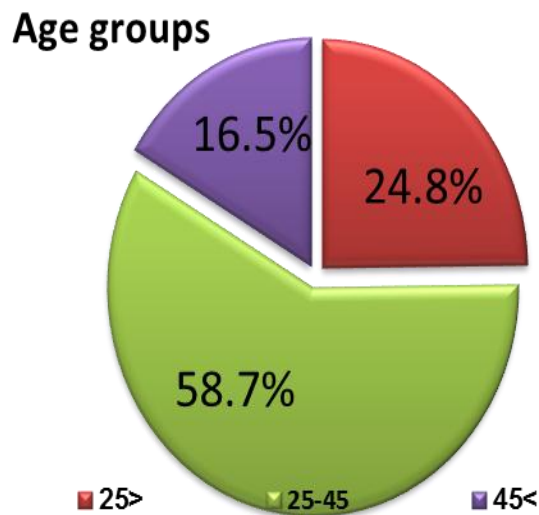
Figure 3 showed that more than half (53.1%) of the participants were selected from private hospitals and clinics, while 46.9% were selected from governmental hospitals.

A higher proportion of the participants (51.9%) had high educational level, those who had medium level of education represented 39.5 % and only 8.6 % had low educational level Figure 4.

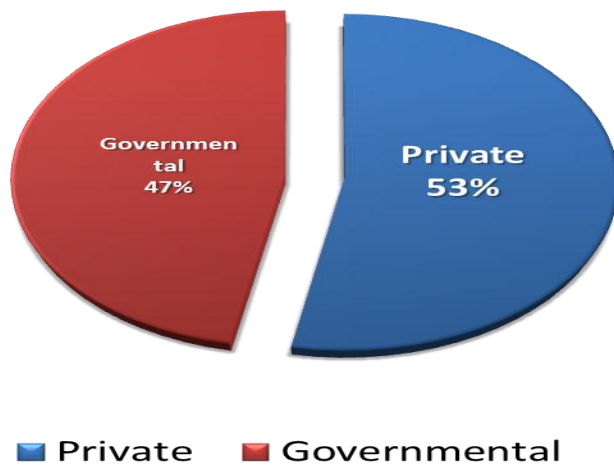




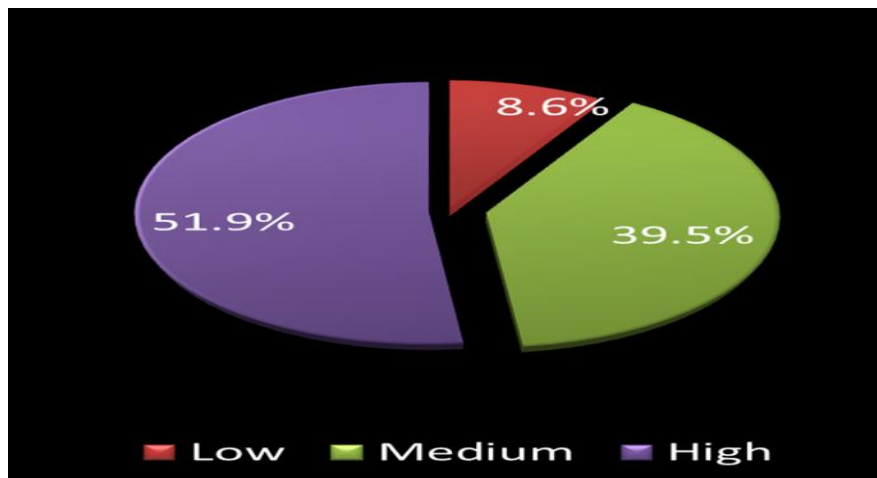
**Figure 1: Distribution of the participants by gender, Benghazi -2011**



**Figure 2: Distribution of Libyan adult by age**



**Figure 3: Distribution of Libyan adult by the type of the health setting**



**Figure 4: Distribution of Libyan adult by education attainment**

**5.1. Section II OHQoL:** This section presents the overall results of the subscales of the OHQoL.

### **1. Physical effects of oral health:**

Table 1 revealed that oral health does not have much effect on the quality of the physical facet of their lives. The physical effect include; eating or enjoyment of food ( $\bar{X}\pm SD = 2.81\pm 1.270$ ), appearance ( $\bar{X}\pm SD = 2.66\pm 1.247$ ), speech ( $\bar{X}\pm SD = 2.77 \pm 1.97$ ), general health ( $\bar{X}\pm SD = 2.78 \pm 1.187$ ), breath odour ( $\bar{X}\pm SD = 2.66\pm 1.263$ ), and comfort ( $\bar{X}\pm SD = 2.78\pm 1.197$ ) All one, oral health does not have effects on Libyan adults overall quality of their physical lives of ( $\bar{X}\pm SD = 2.99\pm 0.73$ ).

**Table 1: Descriptive statistics of physical effects of the oral health of the participants, Benghazi -2011**

| <b>Physical effects</b>     | <b>Mean<br/><math>\bar{X}</math></b> | <b>Std. Deviation<br/>SD</b> |
|-----------------------------|--------------------------------------|------------------------------|
| Eating or enjoyment of food | 2.81                                 | 1.27                         |
| Appearance                  | 2.66                                 | 1.24                         |
| Speech                      | 2.77                                 | 1.97                         |
| General health              | 2.78                                 | 1.18                         |
| Breath odour                | 2.66                                 | 1.26                         |
| Comfort                     | 2.78                                 | 1.19                         |
| Over all                    | 2.99                                 | 0.73                         |

## **2. Psychological effects of oral health**

Table 2 showed that oral health does not have an effect on the quality of the psychological aspect of their lives. These cover carefree manner/lack of worry ( $\bar{X}\pm\text{SD} = 2.91\pm 1.15$ ); sleep ( $\bar{X}\pm\text{SD} = 2.77\pm 1.19$ ); confidence ( $\bar{X}\pm\text{SD} = 2.76\pm 1.18$ ); mood ( $\bar{X}\pm\text{SD} = 2.87\pm 1.15$ ); and personality ( $\bar{X}\pm\text{SD} = 2.84\pm 1.15$ ). The overall psychological effect of oral health was rated as not being affected by oral health ( $\bar{X}\pm\text{SD} = 3.04\pm 0.76$ ).

**Table 2: Descriptive statistics of Psychological effects of the oral health of the participants, Benghazi - 2011.**

| <b>Psychological effects</b>  | <b>Mean<br/><math>\bar{X}</math></b> | <b>Std. Deviation<br/>SD</b> |
|-------------------------------|--------------------------------------|------------------------------|
| Sleep                         | 2.77                                 | 1.19                         |
| Confidence                    | 2.76                                 | 1.18                         |
| Carefree manner/lack of worry | 2.91                                 | 1.15                         |
| Mood                          | 2.87                                 | 1.15                         |
| Personality                   | 2.84                                 | 1.15                         |
| Over all                      | 3.04                                 | 0.76                         |

### **3. Social effects of oral health**

The outcomes of the social effects of OHQoL were not affected by their social lives. The mean score and standard deviation of: social life was ( $\bar{X} \pm SD = 2.85 \pm 1.16$ ), marriage ( $\bar{X} \pm SD = 2.71, \pm 1.13$ ), smiling or laughing ( $\bar{X} \pm SD = 2.66, SD \pm 1.22$ ), work or ability to do their usual jobs ( $\bar{X} \pm SD = 2.8 \pm 1.16$ ), and finances was ( $\bar{X} \pm SD = 2.90 \pm 1.16$ ). The overall, social effect of OHQoL was not affected by oral health ( $\bar{X} \pm SD = 2.94 \pm 0.71$ ) Table 3.

**Table 3: Descriptive statistics: of Social effects of the oral health of the participants, Benghazi 2011.**

| <b>Social effect</b>                  | <b>Mean<br/><math>\bar{X}</math></b> | <b>Std. Deviation<br/>SD</b> |
|---------------------------------------|--------------------------------------|------------------------------|
| Social life                           | 2.85                                 | 1.16                         |
| Marriage                              | 2.71                                 | 1.13                         |
| Smiling or laughing                   | 2.66                                 | 1.22                         |
| Work or ability to do your usual jobs | 2.89                                 | 1.16                         |
| Finances                              | 2.90                                 | 1.16                         |
| Over all                              | 2.94                                 | 0.71                         |



#### **4. Physical effect of oral health in relation to gender**

Table 4 showed that oral health of females had negative effect on their appearance compared to males. The difference was highly significant  $P=0.001$ . Although there were differences between genders but not significant.

#### **5. Psychological effect of oral health in relation to gender**

Table 5 revealed that females had lower proportion of good/ very good of sleep facet of the psychological effects of OHQoL compared to males (21.2% vs 31.0 %) respectively. The difference was highly significant  $P=0.006$ .

Similar pattern was observed regarding mood of females compared to males. Females had lower proportion on good/very good mood compared to males (23.6% vs 32.7%)  $P=0.021$ .

**Table 4:Comparisons of physical effects of oral health of participants, by gender Benghazi -2011.**

| Physical effect       | Males         |             |      |      |                 |      | Females       |             |      |      |                  |      | P value       |
|-----------------------|---------------|-------------|------|------|-----------------|------|---------------|-------------|------|------|------------------|------|---------------|
|                       | Bad/ Very bad |             | None |      | good /Very good |      | Bad/ Very bad |             | None |      | Good / Very good |      |               |
|                       | No            | %           | No   | %    | No              | %    | No            | %           | No   | %    | No               | %    |               |
| <b>Eating</b>         | 120           | 42.3        | 67   | 23.6 | 97              | 34.2 | 206           | 41.6        | 147  | 29.7 | 142              | 28.7 | 0.121         |
| <b>Appearance</b>     | 112           | <b>39.4</b> | 81   | 28.5 | 91              | 32.0 | 234           | <b>47.3</b> | 160  | 32.3 | 101              | 20.4 | <b>.001**</b> |
| <b>Speech</b>         | 103           | 36.3        | 95   | 33.5 | 86              | 30.3 | 202           | 40.8        | 190  | 38.4 | 103              | 20.8 | 0.12          |
| <b>General health</b> | 104           | 36.6        | 91   | 32.0 | 89              | 31.3 | 201           | 40.6        | 186  | 37.6 | 108              | 21.8 | .013          |
| <b>Breath odor</b>    | 115           | 40.5        | 89   | 31.3 | 80              | 28.2 | 222           | 44.8        | 171  | 34.5 | 102              | 20.6 | 0.56          |
| <b>Comfort</b>        | 107           | 37.7        | 91   | 32.0 | 86              | 30.3 | 203           | 41.0        | 175  | 35.4 | 117              | 23.6 | 0.126         |

\* P≤0.05 significant\*\*P≤0.01

**Table 5: Comparisons of psychological effects of oral health of participants, by gender Benghazi – 2011.**

| Psychological effect             | Males                |             |                       | Females              |             |                         | P value      |
|----------------------------------|----------------------|-------------|-----------------------|----------------------|-------------|-------------------------|--------------|
|                                  | Bad/ Very bad<br>N % | None<br>N % | Good/Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % |              |
| <b>Sleep</b>                     | 107 37.7             | 89 31.3     | 88 <b>31.0</b>        | 196 39.6             | 194 39.6    | 105 <b>21.2</b>         | <b>.006*</b> |
| <b>Confidence</b>                | 99 34.9              | 101 35.6    | 84 29.6               | 234 47.3             | 200 40.4    | 189 38.2                | .115         |
| <b>Care manner/lack of worry</b> | 86 30.3              | 110 38.7    | 88 31.0               | 117 35.8             | 196 39.6    | 122 24.6                | .115         |
| <b>Mood</b>                      | 95 33.5              | 96 33.8     | 93 <b>32.7</b>        | 182 36.8             | 196 39.6    | 117 <b>23.6</b>         | <b>.021*</b> |
| <b>Personality</b>               | 95 33.5              | 101 35.6    | 88 31.0               | 180 36.4             | 209 42.2    | 106 21.4                | 0.11         |

\* P<0.05 significant

## **6. Social effect of oral health in relation to gender**

Females showed a lower proportion than males regarding having good /very good social life (21.2%) (33.5%) respectively .This difference was highly significant statically.

High statistical significant difference was noticed between females and male in many social aspects; marriage, ability to work ,and finance ;as lower proportion of females (14.5%) recoded good/ very good regarding marriage facet compared to (27.8%) of males, females had lower proportion of good /very good scores (23.0%) compared to (32.7%) for males in their ability to work . The difference was highly statically significant  $P=0.01$ .

Females scored good/very good (23.4%) and males (33.08%)in respond to the finance . $P=0.006$  Table 6.

**Table 6: Comparisons of Social effects of oral health of participants, by gender Benghazi – 2011**

| Social effect                               | Males                |             |                         | Females              |             |                         | P value           |
|---|----------------------|-------------|-------------------------|----------------------|-------------|-------------------------|-------------------|
|   | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % |                   |
| <b>Social life</b>                          | 100 35.2             | 89 31.3     | 95 <b>33.5</b>          | 175 35.4             | 215 43.4    | 105 <b>21.2</b>         | <b>&lt;.001**</b> |
| <b>Marriage</b>                             | 95 33.5              | 110 38.7    | 79 <b>27.8</b>          | 190 38.4             | 233 47.1    | 72 <b>14.5</b>          | <b>&lt;.001**</b> |
| <b>Smiling or laughing</b>                  | 113 39.8             | 8730.6      | 8429.6                  | 22846.1              | 166 33.5    | 10120.4                 | .114              |
| <b>Work or ability to do your usual job</b> | 9132.0               | 100 35.2    | 93 <b>32.7</b>          | 16934.1              | 212 42.8    | 114 <b>23.0</b>         | <b>.010*</b>      |
| <b>Finances</b>                             | 83 29.2              | 105 37.0    | 96 <b>33.08</b>         | 179 36.2             | 200 40.4    | 116 <b>23.4</b>         | <b>.006*</b>      |

\* P≤0.05 significant \*\*P≤0.01

## **7. Physical effects according to age groups**

Table 7 showed that physical effects of oral health of; eating, appearance, speech, general health, breath odour, and comfort had no significant difference between age groups.

## **8. Psychological effects according to age groups**

Table 8 showed that the psychological effects of oral health of sleep, confidence, carefree manner / lack of worry, mood, and personality had no-significant differences between different age groups.

## **9. Social effects according to age groups**

The social effects of oral health on quality of life, including social life, marriage, smiling or laughing, work or ability to do their usual jobs, and finances had not garnered significant differences when compared by age groups table 9.

**Table 7: Comparisons of physical effects of oral health of participants, by age groups Benghazi - 2011**

| Physical effects      | <25 years            |             |                         | 25-45 years          |             |                         | >45 years            |             |                         | P value |
|-----------------------|----------------------|-------------|-------------------------|----------------------|-------------|-------------------------|----------------------|-------------|-------------------------|---------|
|                       | Bad /Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % |         |
| <b>Eating</b>         | 49 33.1              | 40 32.4     | 59 39.8                 | 150 32.8             | 155 33.9    | 152 33.2                | 42 43                | 40 31.2     | 46 35.9                 | .526    |
| <b>Appearance</b>     | 48 32.4              | 49 33.1     | 51 34.4                 | 154 33.6             | 149 32.6    | 154 33.6                | 39 30.4              | 44 34.3     | 45 35.1                 | .959    |
| <b>Speech</b>         | 44 33.5              | 41 27.7     | 57 38.5                 | 154 33.6             | 165 36.1    | 147 32.1                | 36 28.1              | 47 36.7     | 45 35.1                 | .870    |
| <b>General health</b> | 48 32.4              | 49 33.1     | 51 34.4                 | 159 34.7             | 165 36.1    | 142 31.0                | 47 36.7              | 45 35.1     | 43 33.5                 | .694    |
| <b>Breath odor</b>    | 46 31.0              | 43 33.5     | 59 39.8                 | 152 33.2             | 142 31.0    | 163 35.6                | 43 33.5              | 43 33.5     | 42 43                   | 0.56    |
| <b>Comfort</b>        | 47 31.7              | 44 29.7     | 57 38.5                 | 154 33.6             | 155 33.9    | 148 32.3                | 40 31.2              | 45 35.1     | 43 33.5                 | .154    |

**Table 8: Comparisons of psychological effects of oral health of participants, by age groups Benghazi - 2011**

| Psychological effects            | <25 years            |             |                         | 25-45 years          |             |                         | >45 years            |             |                         | P value |
|----------------------------------|----------------------|-------------|-------------------------|----------------------|-------------|-------------------------|----------------------|-------------|-------------------------|---------|
|                                  | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % |         |
| <b>Sleep</b>                     | 42 28.3              | 54 36.4     | 52 35.1                 | 150 32.8             | 155 33.9    | 152 33.2                | 42 43                | 40 31.2     | 46 35.9                 | .625    |
| <b>Confidence</b>                | 52 35.1              | 48 32.4     | 48 32.4                 | 154 33.6             | 149 32.6    | 154 33.6                | 39 30.4              | 44 34.3     | 45 35.1                 | .870    |
| <b>Care manner/lack of worry</b> | 47 31.7              | 44 29.7     | 57 38.5                 | 154 33.6             | 165 36.1    | 147 32.1                | 36 28.1              | 45 35.1     | 47 36.7                 | .959    |
| <b>Mood</b>                      | 51 34.4              | 49 50       | 48 32.4                 | 154 33.6             | 135 29.5    | 148 32.3                | 45 35.1              | 47 36.7     | 43 33.5                 | .469    |
| <b>Personality</b>               | 50 33.7              | 51 34.4     | 47 31.7                 | 140 30.6             | 150 32.8    | 163 35.4                | 49 38.2              | 40 31.2     | 39 30.4                 | .354    |



**Table 9: Comparisons of Social effects of oral health of participants, by age groups Benghazi - 2011**

| Social effects                              | <25 years            |             |                         | 25-45 years          |             |                         | >45 years           |             |                         | P value |
|---|----------------------|-------------|-------------------------|----------------------|-------------|-------------------------|---------------------|-------------|-------------------------|---------|
|   | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Very bad/bad<br>N % | None<br>N % | Good / Very good<br>N % |         |
| <b>Social life</b>                          | 42 28.3              | 54 36.4     | 52 35.1                 | 150 32.8             | 155 33.9    | 152 33.2                | 42 43               | 40 31.2     | 46 35.9                 | .625    |
| <b>Marriage</b>                             | 52 35.1              | 48 32.4     | 48 32.4                 | 154 33.6             | 149 32.6    | 154 33.6                | 39 30.4             | 44 34.3     | 45 35.1                 | .870    |
| <b>Smiling or laughing</b>                  | 47 31.7              | 44 29.7     | 57 38.5                 | 154 33.6             | 165 36.1    | 147 32.1                | 36 28.1             | 45 35.1     | 47 36.7                 | .959    |
| <b>Work or ability to do your usual job</b> | 51 34.4              | 49 50       | 48 32.4                 | 154 33.6             | 135 29.5    | 148 32.3                | 45 35.1             | 47 36.7     | 43 33.5                 | .469    |
| <b>Finances</b>                             | 50 33.7              | 51 34.4     | 47 31.7                 | 140 30.6             | 150 32.8    | 163 35.4                | 49 38.2             | 40 31.2     | 39 30.4                 | .354    |

## **10. Physical effects according to education attainment**

Table 10 revealed that all the physical effects of oral health (eating, appearance, speech, general health, breath odour, comfort) had no statistical significant differences when compared by the educational attainment.

## **11. Psychological effects according to education attainment**

Table 11 Showed that there was no statistical significant difference between different level of education and their psychological effects of oral health.

## **12. Social effects according to education attainment**

Table 12 There was no statistical significant differences between different education levels and the social effect of oral health.

**Table 10: Comparisons of physical effects of oral health of participants, by educational attainment Benghazi - 2011**

| Physical effect | Low education        |             |                         | Medium education     |             |                         | High education       |             |                         | P value |
|-----------------|----------------------|-------------|-------------------------|----------------------|-------------|-------------------------|----------------------|-------------|-------------------------|---------|
|                 | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % |         |
| Eating          | 32 47.7              | 19 28.3     | 16 23.8                 | 112 36.4             | 114 46.9    | 81 26.3                 | 163 40.2             | 118 29.1    | 124 30.6                | .526    |
| Appearance      | 42 62.6              | 19 13.4     | 23 34.3                 | 114 46.9             | 112 36.4    | 81 26.3                 | 180 44.4             | 127 31.4    | 98 24.2                 | .959    |
| speech          | 23 34.3              | 25 37.3     | 19 28.3                 | 10 35.1              | 11 36.1     | 8 28.6                  | 159 39.3             | 151 37.3    | 95 23.5                 | .870    |
| General health  | 21 31.3              | 25 37.3     | 21 31.3                 | 10 32.8              | 11 46.9     | 9 29.9                  | 153 37.8             | 146 36.0    | 106 26.2                | .694    |
| Breath odor     | 32 47.7              | 19 28.3     | 16 23.8                 | 9 29.3               | 11 46.9     | 10 33.5                 | 222 44.8             | 171 34.5    | 102 20.6                | 0.56    |
| comfort         | 32 47.7              | 16 23.8     | 19 28.8                 | 10 53.4.2            | 10 233.2    | 10 023.5                | 165 40.7             | 148 36.5    | 92 22.7                 | .154    |

**Table 11: Comparisons of Psychological effects of oral health of participants by educational attainment, Benghazi - 2011**

| Psychologic<br>al effect                 | Low education           |             |                            | Medium education        |             |                            | High education          |             |                               | P value |
|--|-------------------------|-------------|----------------------------|-------------------------|-------------|----------------------------|-------------------------|-------------|-------------------------------|---------|
|  | Bad/ Very<br>bad<br>N % | None<br>N % | Good / Very<br>good<br>N % | Bad/ Very<br>bad<br>N % | None<br>N % | Good /<br>Very good<br>N % | Bad/ Very<br>bad<br>N % | None<br>N % | Good /<br>Very<br>good<br>N % |         |
| <b>Sleep</b>                             | 2232.8                  | 2131.3      | 24 35.8                    | 99 32.2                 | 10333.5     | 10534.2                    | 150 37.0                | 154 38.0    | 101 24.9                      | .511    |
| <b>Confidence</b>                        | 2638.8                  | 21 31.3     | 20 29.8                    | 114 46.9                | 10132.8     | 9229.9                     | 155 38.3                | 154 38.0    | 96 23.7                       | .884    |
| <b>Care<br/>manner/lack<br/>of worry</b> | 2537.3                  | 1826.8      | 24 35.8                    | 10534.2                 | 9932.2      | 10333.5                    | 129 31.9                | 167 41.2    | 109 26.9                      | .447    |
| <b>Mood</b>                              | 19 28.8                 | 2943.2      | 19 28.8                    | 11236.4                 | 10233.2     | 9330.2                     | 137 33.8                | 161 39.8    | 107 26.4                      | .403    |
| <b>Personality</b>                       | 21 31.3                 | 23 34.3     | 2334.3                     | 9530.9                  | 10333.5     | 10935.5                    | 142 35.1                | 170 42.0    | 93 23.0                       | .346    |

**Table 12: Comparisons of Social effects of oral health of participants by educational attainment, Benghazi - 2011**

| Social effect                               | Low education   |                     |                            | Medium education        |             |                               | High education          |             |                               | P value |
|---|-----------------|---------------------|----------------------------|-------------------------|-------------|-------------------------------|-------------------------|-------------|-------------------------------|---------|
|   | Bad /bad<br>N % | Very<br>None<br>N % | Good /<br>Very good<br>N % | Bad/ Very<br>bad<br>N % | None<br>N % | Good /<br>Very<br>good<br>N % | Bad/ Very<br>bad<br>N % | None<br>N % | Good /<br>Very<br>good<br>N % |         |
| <b>Social life</b>                          | 2934.2          | 2029.8              | 1826.8                     | 11938.7                 | 114 46.9    | 7424.1                        | 13834.1                 | 166 41.0    | 101 24.9                      | .538    |
| <b>Marriage</b>                             | 2131.3          | 2435.8              | 2232.8                     | 9932.2                  | 10233.2     | 10634.5                       | 141 4.8                 | 189 46.7    | 75 18.5                       | .365    |
| <b>Smiling or laughing</b>                  | 1928.8          | 2435.8              | 2435.8                     | 10132.8                 | 10534.2     | 10132.8                       | 174 43.0                | 138 34.1    | 93 23.0                       | .637    |
| <b>Work or ability to do your usual job</b> | 2638.8          | 2131.3              | 2029.8                     | 9430.6                  | 10634.5     | 10743.8                       | 123 30.4                | 175 43.2    | 107 26.4                      | .123    |
| <b>Finances</b>                             | 2334.3          | 1928.8              | 2537.3                     | 11035.8                 | 10233.2     | 9530.9                        | 132 32.6                | 170 42.0    | 103 25.4                      | .250    |

### **13. Physical effects according to type of clinic setting**

Table 13 revealed there were no statistically significance differences between participants who attended private and governmental clinics ,and physical effect of oral health.

### **14. Psychological effects according to type of clinic setting**

No statistical significant differences were observed between participants attending private and governmental clinics regarding the psychological aspect (sleep, confidence, carefree manner lack of worry, mood and personality) Table 14.

### **15. Social effects according to type of clinic setting**

There were no statistically significant differences between participants attending private and governmental clinics regarding social effects (social life, relations, smiling, job and finance) as shown by table 15.

**Table 13: Comparisons of physical effects of oral health of participants by type of the clinic (private –governmental) setting, Benghazi – 2011**

| Physical effect       | Public               |             |                         | Private              |             |                         | P value |
|-----------------------|----------------------|-------------|-------------------------|----------------------|-------------|-------------------------|---------|
|                       | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % |         |
| <b>Eating</b>         | 170 41.1             | 121 9.2     | 123 29.7                | 156 42.7             | 93 25.5     | 116 31.8                | .498    |
| <b>Appearance</b>     | 173 41.8             | 139 33.6    | 102 24.6                | 173 47.4             | 102 27.9    | 90 24.7                 | .186    |
| <b>Speech</b>         | 158 38.2             | 159 38.4    | 97 23.4                 | 147 40.3             | 126 34.5    | 92 25.2                 | .529    |
| <b>General health</b> | 153 37.0             | 152 36.7    | 109 26.3                | 152 41.6             | 125 34.2    | 88 24.1                 | .407    |
| <b>Breath odor</b>    | 164 39.6             | 145 35.0    | 105 25.4                | 173 47.4             | 115 31.5    | 77 21.1                 | .084    |
| <b>Comfort</b>        | 151 36.5             | 156 37.7    | 107 25.8                | 159 43.6             | 11030.1     | 96 26.3                 | .058    |

\* P≤0.05 significant

**Table 14: Comparison of psychological effects of oral health by type of the clinic (private –governmental) setting of Libyan adults–Benghazi (2011)**

| Psychological effect             | Governmental         |             |                         | Private              |             |                         | P value |
|----------------------------------|----------------------|-------------|-------------------------|----------------------|-------------|-------------------------|---------|
|                                  | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % | Bad/ Very bad<br>N % | None<br>N % | Good / Very good<br>N % |         |
| <b>Sleep</b>                     | 154 37.2             | 149 36.0    | 111 26.8                | 149 40.8             | 134 36.7    | 82 22.5                 | .339    |
| <b>Confidence</b>                | 154 37.2             | 159 38.4    | 101 24.4                | 145 39.7             | 131 35.9    | 98 26.8                 | .772    |
| <b>Care manner/lack of worry</b> | 135 32.6             | 167 40.3    | 112 27.1                | 128 35.1             | 196 39.6    | 122 24.6                | .740    |
| <b>Mood</b>                      | 135 32.6             | 165 39.9    | 114 27.5                | 142 38.9             | 127 34.8    | 96 26.3                 | .166    |
| <b>Personality</b>               | 136 32.9             | 175 42.3    | 103 24.9                | 139 38.1             | 135 37.0    | 91 24.9                 | .239    |



**Table 15: Comparisons of social effects of oral health of participants by type of the clinic (private –governmental) setting, Benghazi - 2011**

| Social effect                                   | Governmental        |             |                           | Private             |             |                           | P value |
|---|---------------------|-------------|---------------------------|---------------------|-------------|---------------------------|---------|
|   | Very bad/bad<br>N % | None<br>N % | Very good<br>/good<br>N % | Very bad/bad<br>N % | None<br>N % | Very good<br>/good<br>N % |         |
| <b>Social life</b>                              | 131 31.6            | 169 40.8    | 114 27.5                  | 144 39.5            | 135 37.0    | 86 23.6                   | .072    |
| <b>Marriage</b>                                 | 141 34.1            | 192 46.4    | 81 19.6                   | 144 39.3            | 151 41.4    | 70 19.2                   | .302    |
| <b>Smiling or laughing</b>                      | 176 42.5            | 138 33.3    | 100 24.2                  | 165 45.2            | 115 31.5    | 85 23.3                   | .747    |
| <b>Work or ability to do<br/>your usual job</b> | 124 30.0            | 177 42.8    | 113 27.3                  | 136 37.3            | 135 37.3    | 94 25.8                   | .078    |
| <b>Finances</b>                                 | 139 33.6            | 169 40.8    | 106 25.6                  | 123 33.7            | 136 37.3    | 106 29.0                  | .479    |

# DISCUSSION

## **Discussion**

### **6.1. Concept of quality of life**

Several years ago, the World Health Organization declared that “Health is not merely the absence of disease or infirmity, but a dynamic state of complete physical, mental, social and spiritual well-being.” According to non-health-related Quality of Life (QOL) conceptualization, this includes not only individual psychological well-being, but also positive interaction between individuals and their environment. Stressing on the importance of physiological part of wellbeing the quality of life group has developed an instrument to assess the QOL of individuals and society<sup>(10)</sup>.

### **6.2. Overall OHRQoL**

The outcomes of the present study indicats that oral health is not perceived to have much effect on the physical aspect of participant’s lives; including their eating or enjoyment of food, appearance, speech, general health and breath odour. Moreover, similar outcomes were noted for the psychological effects of carefree manner/lack of worry, sleep, confidence, mood and personality. The social effects of oral health of adult Libyan livening in Benghazi were not affected. oral health does not have any impact on their social lives including the facets of social life, marriage, smiling or laughing, work or ability to do

usual jobs and finances. These outcomes suggest that Libyan adults overall do not perceive much impact from oral health, explaining why relatively poor oral health practices / behaviors are apparent among them. These findings were consistent with the assertion of Eldharat et al (2009),<sup>(18)</sup> who reported that Libyans generally had poor oral health, both as adolescents and adults suffered from halitosis which inevitably hinders their social lives. In addition, poor oral health, according to Koshimun et al (2003)<sup>(50)</sup> and Signoretto et al (2006)<sup>(51)</sup> may also possibly be aggravated by frequent intake of coffee and tea which could also explain our finding.

Libyan adults, however, do not perceive much effect from oral health on their physical lives. This was in line with the results of Inukai et al (2010)<sup>(46)</sup>, who showed that psychological discomfort, functional limitation, physical pain and lowered life satisfaction occurring to a lesser extent. The implication is that participants who had oral disorders not only suffer, but had difficulty chewing; other aspects of their life are also affected.

### **6.3. Gender and OHRQoL**

Factors like gender can influence QOL, consistent with the findings of other studies; we found that women perceive their oral health as having a greater impact on their quality of life than men<sup>(52, 53)</sup>. The results of the current study indicated that oral health seems to exert greater influence on females,

specifically on the physical effects appearance. This is in agreement with the results of Klages et al <sup>(54)</sup> who reported that females were concerned with dental aesthetics than males.

Similarly, they experience greater effects on sleep, mood, and all social aspects except for the work or ability to do usual job where there was no significant difference between genders. The influence of gender on oral health effect perceptions is supportive of the research of Osterberg et al (2006) <sup>(21)</sup> where oral hygiene has been found to differ between genders, although tooth brushing is equally common. They suggested that females brushed their teeth more often than males, who were more likely to overlook the habit – and consequently suffer from more oral problems. <sup>(21)</sup>

This was despite the Dunedin study where women having fewer missing teeth or untreated decayed surfaces, and less periodontal attachment loss than men. They were also more likely to be preventive dental visitors. Moreover, women who were defined as cases of periodontal disease had a threefold greater risk of frequent oral impacts than females who were not cases. <sup>(54)</sup>

#### **6.4. Age groups and OHRQoL**

In terms of age, and its effect on oral health there was no significant difference between all age groups in the physical aspects, psycholocial and social. A possible explanation could be that the severe periodontal disease and tooth loss which can increase problems in function and impact on an individual's

quality of life are usually at an older age. Also the finding from an epidemiological study revealed that older people frequently had poor oral hygiene, high levels of plaque and calculus and high prevalence of periodontal disease. <sup>(55)</sup>Elderly have higher dental caries both in terms of Decayed, Missing and Filled teeth, and root surface caries. These outcomes are only partly consistent with those of Inukai et al (2010) <sup>(46)</sup> who found that being partially dentate had effects on one's chewing and overall quality of life. Not only is oral health affected, but also, their dietary options, nutrition intake, and general health. Chewing problems are more likely to occur when one is at or beyond middle age, and is a critical problem that, when evaluated through the OHRQoL, is associated with other oral health concerns.

#### **6.4. Education and OHRQoL**

The fact that the educational level had no effect on the reported quality of life of the individual in the current study was in disagreement with a study conducted in UK <sup>(55)</sup>. Moreover, the outcomes of the current study do not support the finding of Lahti-Suominen-Taipale and Hausen (2008) <sup>(23)</sup>, they found that education levels were linked to oral problems in the case of younger individuals. The study of Espinoza et al(2013) <sup>(56)</sup> showed that adults with primary education (or less) were more likely than their tertiary-educated counterparts to report problems speaking, trouble or pain discomfort in eating with

others, and interference with activities of daily living. The number of teeth with untreated caries was positively associated with impaired OHRQoL, and the number of remaining teeth was negatively associated with it. The different results from our study compared to those of the researchers in other countries may be due to the differences in the way of thinking, education, and socio economic factors. Where more than half of the participants had high education level.

Contrary to the present results of no significant relationship between education and OHRQoL, Tsakos et al<sup>(57)</sup>, found a clear educational gradient in oral impacts as measured by the Geriatric Oral Health Assessment Index; the lower the educational level the worse the oral health perceptions. An inverse graded association between education and oral impacts on daily performances was also reported from the English Longitudinal Survey of Aging,

In public health, QOL measurement is a useful tool to plan welfare policies because it is possible to determine the population needs, priority of care, and evaluation of adopted treatment strategies; thus helping in the decision making process. Regarding research, these measurement tools help to assess the outcomes of treatments or actions and further develop guidelines for evidence-based clinical practice.<sup>(56)</sup>

Overall, it can be said that the Libyan community remains to be mostly

lacking knowledge of oral diseases and how to treat them, and therefore they need to have more dental professionals. It cannot possibly be denied that oral health is a major concern of most Libyans nowadays. One strength of the methodology was the use of an adequate number of respondents. However, this study faced a limitation as participants were selected from clinics waiting room, which could make some of them in a hurry or unwilling to participate.

Despite this, the study has contributed by being the first study to explore OHQoL in Libyan adults. It will be worthwhile to further study the influence of individual and environmental factors on OHQoL. Future studies should consider oral clinical examination to link the oral health status with the OHQoL with follow-up periods.



**CONCLUSION  
AND  
RECOMMENDATIONS**

## **Conclusion**

**From this study it can be concluded that:**

- Oral health does not have much effect on the quality of the physical, psychological and social aspect of participant's lives.
- Females seem to perceive oral health to have greater physical effects than males on their appearance and on their psychological aspect of sleep and mood.
- Females have been effected more than males in social aspects; marriage, ability of work and finance.
- In terms of the age groups there was no significance regarding physical, psychological and social aspects.
- In terms of level of education, there was no significance between different education levels regarding physical, psychological and social aspects.
- In terms of the kind of the clinics whether private or governmental, there was no significance between the two hospital attainers regarding physical, psychological and social aspects.

## **Recommendations**

**Based on the finding of the current study the following recommendations are suggested:**

1. The need for broader understanding of the social impact of oral health.
2. Psychosocial factors need further exploration as a possible framework for oral health promotion.
3. Theory should be used to guide, develop and evaluate oral health promotion interventions as it provides a bridge from findings in one study to another. This helps to systematically define constructs allowing for comparisons and evaluations across studies.
4. A policy to recommend the involvement of dental professionals in promoting oral health through dental education. This policy should be recommended to be implemented in hospitals, clinics, community care and institutional care.
5. Future studies should consider oral clinical examination to link the oral health status with the OHQoL with follow-up periods.

# REFERENCES

**References**

1. **Hassel J, Koke U, Schmitter M, Rammelsberg P.** Factors associated with oral health-related quality of life in institutionalized elderly. *Acta Odontol Scand.* 2006; 64:9-15.
2. **Locker D, Slade G.** Association between clinical and subjective indicators of oral health status in an older adult population. *Gerodontology* .1994; 11:108-14.
3. **Proffit, W.R., White, R.P., and Sarver, D.M.** *Contemporary treatment of dentofacial deformity.* St Louis: Mosby. 2003.
4. **Brennan D.S., Spencer A.J., Roberts-Thomson, K.F.** Tooth loss, chewing ability and quality of life. *Qual Life Res* 2008;17: 227-35.
5. **Naito, M., Yuasa, H., Nomura, Y., Nakayama, T., Hamajima, N., Handa, N.** Oral health status and health-related quality of life: *a systematic review.* *J Oral Sci.* 2006; 48: 1-7.
6. **Motegi, E., Hatch, J.P., Rugh. J.D., Yamaguchi, H.** Health-related quality of life and psychosocial function 5 years after orthognathic surgery. *American Journal of Orthodontics and Dentofacial Orthopaedics.* 2003; 124:138-43.
7. **Elfituri, A.A., Elmahaishi, M.S., MacDonald, T.H.** Role of health education programmes within the Libyan community. *East Mediterr Health J.* 1999;5:268-76.
8. **Locker, D., Matear, D., Stephens, M., Jokovic, A.** Oral health-related quality of life of a population of medically compromised elderly people. *Community Dent Health.* 2002; 19: 90-7.

9. **Baba, K., Inukai, M., John, M.T.** Feasibility of oral health-related quality of life assessment in prosthodontic patients using abbreviated Oral Health: Impact Profile questionnaires. *J Oral Rehab.*2008; 35: 224-8.
- 10.**Bedi, R., McGrath, C.** An evaluation of a new measure of oral health related quality of life OHQoL-UK (W). *Community DentOral .*2001;18: 138-43.
- 11.**Steele, J.G., Sanders, A.E., Slade, G.D., Allen, P.F., Lahti, S., etal.**How do age and tooth loss affect oral health impacts and quality of life? A study comparing two national samples.*Community DentOral .*2004; 32:107-14.
- 12.**Andersson, P., Hakeberg, M., Karlberg, G., Ostberg, A.L.** Clinical correlates of oral impacts on daily performances. *Int J Dent Hyg.*2010; 8: 219–26.
- 13.**Cormac, I, and Jenkins, P.** Understanding the importance of oral health in psychiatric patients. *Advances in Psychiatric Treatment.*1999;5:53-60.
- 14.**Ekanayake, L., Perera, I.** The association between clinical oral health status and oral impacts experienced by older individuals in Sri Lanka. *J of Oral Rehab.*2004; 31: 831–6.
- 15.**Tsakos, G., Marcenes, W., Sheiham, A.** The relationship between clinical dental status and oral impacts in an elderly population. *Oral Health Prev Dent.*2004; 2: 211–20.
- 16.**Astrom, A.N., Haugejorden, O., Skaret, E., Trovik, T,A., Klock, K.S.** Oral impacts on daily performance in Norwegian adults: the influence of age, number of missing teeth, and socio-demographic factors. *Eur JOral Sci.*2006; 114: 115–21.
- 17.**Walter, M.H., Woronuk, J.I., Tan, H.K.** Oral health related quality of life and its association with sociodemographic and clinical findings in 3 northern outreach clinics. *JCanad Dental Asson.*2007;73:153.

18. **Eldarrat, A., Alkhabuli, J., Malik, A.** The prevalence of self-reported halitosis and oral hygiene: practises among Libyan students and office workers. *Libyan J Med.* 2008 ;1:170-6.
19. **Taani DQ.** Oral health in Jordan. *Int Dent J.* 2004;54:395–400.
20. **Golna, C., Pashardes, P., Allin, S., Theodourou, M., Merkur, S Mossialos, E.** *Health care systems in transition.* 2004. Retrieved from: [http://www.euro.who.int/\\_data/assets/pdf\\_file/0020/75152/E85255.pdf](http://www.euro.who.int/_data/assets/pdf_file/0020/75152/E85255.pdf)
21. **Osterberg, T., Johanson, C., Sundh, V., Steen, B., Birkhed, D.** Secular trends of dental status in five 70-year-old cohorts between 1971 and 2001. *Community Dent Oral Epidemiol,* 2006;34: 446–54.
22. **Slade, G.D, Atchison, K.A., Kressin, N.R., Locker, D., Reisine, S.T.** Conference summary: assessing oral health outcomes – measuring health status and quality of life. *Community of Dental Health,* 1998; 1:3–7.
23. **Lahti, S., Suominen-Taipale, L., Hausen, H.** Oral health impacts among adults in Finland: competing effects of age, number of teeth, and removable dentures. *Eur J Oral Sci.* 2008; 116:260–6.
24. **Quinn ,B,C., Catalano R,A., Felber E.** The effect of community-level unemployment on preventive oral health care utilizati. *Health Serv Res.* 2009 ;44:162-81.
25. **Ekbäck, G., Nordrehaug-Astrøm, A., Klock, K., Ordell, S., Unell, L.** Satisfaction with teeth and life course predictors: a prospective study of a Swedish 1942 birth cohort. *Eur J Oral Sci* 2010;118:66–74.
26. **Romney, D., Brown, R., Fry, P.** Improving the quality of life: prescriptions for change. *J Indian Soc.* 1994; 33,:237-72.

27. **Slade, G.D.** Assessing change in quality of life using the Oral Health Impact Profile. *Community Dent Oral Epidemiol*, 1998; 26: 52–61.
28. **Adulyanon, S., Sheiham, A.** (1996). Oral impacts on daily performances. In G.D. Slade (ed.) *Measuring Oral Health and Quality of Life* (pp. 151–160). Chapel Hill, North Carolina: Department of Dental Ecology, School of Dentistry, University of North Carolina.
29. **Petersen, PE.** The World Oral Health Report 2003: Continuous improvement of oral health in the 21st century – the approach of the WHO Global Oral Health Programme. *Community Dentistry and Oral Epidemiology* 2003;32:3-24
30. **Ekman, A.** Major public health problems – dental health. *Scandinavian Journal of Public Health*, 2006; 34:139–46.
31. **McGrath, C., Bedi, R.** Population based norming of the UK oral health related quality of life measure (OHQoL-UK). *Br Dent J*. 2002; 193: 521–4.
32. **McGrath, C., Adu-Ababio, F., Zaki, A.S. Bedi, R.** An evaluation of an oral health related quality of life measure – OHQoL-UK in Ghana. *J Dent Res*. 1999; 78: 1059-93.
33. **Allen, P.F.** Assessment of oral health related quality of life. *Health and Life Qual Outcomes* .2003; 1: 40.
34. **Sanz M, Roldán S, Herrera D.** Fundamentals of breath malodour. *J Contemp Dent Pract*. 2001; 15:1-17.
35. **Murata T, Fujiyama Y, Yamaga T, Miyazaki H.** Breath malodour in an asthmatic patient caused by side-effects of medication: a case report and review of the literature. *Oral Dis*. 2003; 9: 273–6.



36. **Atchinson, K.A., Dolan, T.A.** Development of the Geriatric Oral Health Assessment Index. *J Dent Educ.* 1990;54: 680-7
37. **Slade G.D., Spencer, A.J.** Development and evaluation of the Oral Health Impact Profile. *Community Dent Health.* 1994;11: 3-11.
38. **World Health Organization.** *International Classification of Impairments, Disabilities, and Handicaps.* Geneva: World Health Organization.(1980)
39. **Jelsma, J.** Use of the International Classification of Functioning, Disability and Health: A literature survey. *J Rehabil Med.* 2009; 41: 1–12.
40. **Locker, D., Miller, Y.** Evaluation of subjective oral health status indicators. *J Public Health Dent .* 1994; 54: 167-76.
41. **McGrath, C., Alkhatib, M.N., Al-Munif, M., Bedi, R., Zaki, A.S.** Translation and validation of an Arabic version of the UK oral health related quality of life measure (OHQoL UK©) in Syria, Egypt and Saudi Arabia. *Community Dent Health.* 2003; 20: 241-5.
42. **Mumcu1, G., Hayran, O., Ozalp1, D.O., Inanc, N., Yavuz, S., Ergun, T., Direskeneli, H.** The assessment of oral health-related quality of life by factor analysis in patients with Behcet’s disease and recurrent aphthous stomatitis. *J Oral Pathol Med.* 2007; 36: 147–52.
43. **Lopez-Jornet, p., Camacho-Alonso, F., Lucero-Berdugo, M.** Quality of life in patients with burning mouth syndrome. *J Oral Pathol Med.* 2008; 37: 389–94.
44. **Al-Bitar, Z., Al-Omari, I., Al-Ahmad, H., El Maaytah, M., Cunningham, S.** A comparison of health-related quality of life between Jordanian and British orthognathic patients. *Eur J Orthod.* 2009; 31: 485-9.
45. **Al-Ahmad, H., Al-Sadi, W., Al-Omari, I., Al-Bitar, Z.** condition-specific quality of life in Jordanian patients with dentofacial deformities: a comparison

- of generic and disease-specific measures..*Oral Surg Oral Med Oral Pathol Oral RadiolEndod.*2009; 107:49-55.
- 46.**Inukai, M., John, M., Igarashi, Y., and Baba, K.** Association between perceived chewing ability and oral health-related quality of life in partially dentate patients. *Health and Quality of Life Outcomes*,2010;8: 118.
- 47.**Gerritsen, A., Allen, F., Witter, D.J., Bronkhorst, E., and Creugers, N.** Tooth loss and oral health-related quality of life: a systematic review and meta-analysis. *Health and Quality of Life Outcomes*, 2010;8: 126.
- 48.**El Gehani, R., Krishnan, B., and Orafi, H.** (2008). The Prevalence of Inflammatory and Developmental Odontogenic Cysts in a Libyan Population. *Libyan Journal of Medicine*. AOP: 071216.
- 49.**SPSS Inc.** Released 2008. SPSS Statistics for Windows, Version 17.0. Chicago: SPSS Inc.
- 50.**Koshimune S, Awano S, Gohara K, Kurihara E, Ansai T, Takehara T.** Low salivary flow and volatile sulfur compounds in mouth air. *Oral Surg Oral Med Oral Pathol Oral RadiolEndod.* 2003; 96:38-41.
- 51.**Signoretto C, Burlacchini G, Bianchi F, Cavalleri G, Canepari P.** Differences in microbiological composition of saliva and dental plaque in subjects with different drinking habits. *New Microbiol.* 2006; 29:293-302.
- 52.**McGrath C, Bedi R.** Gender variations in the social impact of oral health. *J Ir Dent Assoc.*2000; 46: 87–91.
53. **Mason J, Pearce MS, Walls AWG, Parker L, Steele JG.** How do factors at different stages of the life course contribute to oral-health-related quality of life in middle age for men and women? *J Dent Res.* 2006; 85: 257–61.

54. Klages U, Bruckner A, Zentner A. Dental aesthetics, self-awareness, and oral health-related quality of life in young adults. *Eur.J.Orthod.* 2004; 26:507-14.
55. McGrath C, Bedi R. A study of the impact of oral health on the quality of life of older people in the UK findings from a national survey. *Gerodontology.* 1998;15:93-8.
56. Espinoza, I., Thomson, M., Gamonal, G., Arteaga, O., Disparities in aspects of oral-health-related quality of life among Chilean adults. *Community Dentistry and Oral Epidemiology.* 2013; 41, 242–250
57. Tsakos, G., Marcenes, W., Sheiham, A. The relationship between clinical dental status and oral impacts in an elderly population. *Oral Health and Preventive Dentistry.* 2004; 2, 211–220.

# APPENDICES

## استبيان

اخي المواطنه اختي المواطنه ارجو منك المشاركة في هذا الاستبيان بخصوص صحة فمك واسنانك  
(اسنانك - لثتك - الاسنان الصناعية )

علما بان المعلومات الموجودة سنحافظ علي سريتها .ونشكركم علي مشاركتكم.

- اشر علي اجاباتك
- تذكر انه لا يوجد اجابة صحيحة او خاطئة
- العيادة عامة ..... خاصة.....
- العمر ..... المستوى التعليمي .....الجنس.....

| ما هو تأثير صحة الفم عليك ؟؟                            | معدل التأثير |     |         |     |         |
|---|--------------|-----|---------|-----|---------|
|   | سيء جدا      | سيء | لا يوجد | جيد | جيد جدا |
| تأثيره علي الاكل والاستمتاع بالطعام                     |              |     |         |     |         |
| تأثيره علي المظهر                                       |              |     |         |     |         |
| تأثيره علي التحدث                                       |              |     |         |     |         |
| تأثيره الصحة العامة                                     |              |     |         |     |         |
| تأثيره علي القدرة علي الاسترخاء والنوم                  |              |     |         |     |         |
| تأثيره علي الحياة الزوجية                               |              |     |         |     |         |
| تأثيره علي الابتسام والضحك                              |              |     |         |     |         |
| تأثيره علي الثقة بالنفس                                 |              |     |         |     |         |
| تأثيره علي عدم القلق                                    |              |     |         |     |         |
| تأثيره علي الحياة الاجتماعية                            |              |     |         |     |         |
| تأثيره علي المزاج                                       |              |     |         |     |         |
| تأثيره علي العمل والقدرة علي القيام بالوظائف الاعتيادية |              |     |         |     |         |
| تأثيره علي الدخل والصراف                                |              |     |         |     |         |
| تأثيره علي شخصيتك                                       |              |     |         |     |         |
| تأثيره علي راحتك  |              |     |         |     |         |
| وجود رائحة بالفم  |              |     |         |     |         |

Appendix – Survey Questionnaire(English version)

This set of questions is about how your oral health (your teeth, gums, mouth and/or false teeth) may have affected your quality of life.

\* Remember there is no right or wrong answer.

|   | <b>Rate the effect</b> |                       |                       |                       |                       |
|---|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| What effect*, if any, does your oral health have on your..... | Very Good              | Good                  | Not Much              | Bad                   | Very Bad              |
| ..... eating or enjoyment of food?                            | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ..... appearance?   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| .....speech?  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| .....general health?  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| .....ability to relax or sleep?                               | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| .....social life?   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| .....romantic relationships?                                  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ..... smiling or laughing?                                    | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ..... confidence?   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ..... carefree manner (lack of worry)?                        | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ..... mood?   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ..... work or ability to do your usual jobs?                  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ..... finances?   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ..... personality?  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ..... comfort?  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ..... breath odour?   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

# **ARABIC SUMMARY**

# صحة الفم المتعلقة بجودة الحياة عند الليبيين البالغين

## (دراسة مقطعية)

قدمت من قبل :

روبي ادريس الرفادي

تحت اشراف

د. عزة الصديق قريو

د. خديجة عوض حرويس

## الملخص

**المقدمة:** اجريت تقصيات حول صحة الفم والاسنان في ليبيا سابقا, وكان محورها الطرق الاكلينيكية النمطية التي لا تتعرف علي وقع واثر اضطراب صحة الفم والاسنان في المجتمع .

**الهدف :** تقييم صحة الفم علي جودة الحياة لدى الليبيين البالغين المترددين علي الخدمات الصحية العامة والخاصة بمدينة بنغازي.

**طريقة العمل:** تم اختيار عينة عشوائية مكونة من 778 بالغين من الفئة العمرية 18-65 سنة , وقد تم استعمال استبيان مترجم من اللغة الإنجليزية الي اللغة العربية .للحصول علي معلومات تبين مكانة صحة الفم واثرها على جودة الحياة.

**النتائج:** شملت العينة 63.5% اناث و 36.5% ذكور . كان معدل العمر 35 سنة بمعدل انحراف معياري  $\pm 12$  سنة . وكانت العينة 53.1% من العيادات خاصة و 46.9% من مستشفيات حكومية . اظهر البحث ان صحة الفم تحظي بتأثر اكبر لدى الاناث مقارنة بالذكور . كما اتضح ان ليس هناك فروقات هامة لدى العينة بخصوص الالوجه الجسدية و النفسية والاجتماعية , كما لم يوجد اختلاف بين المشاركين من المستشفيات والعيادات العامة والخاصة .





# صحة الفم المتعلقة بجودة الحياة عند الليبيين البالغين (دراسة مقطعية)

قدمت من قبل :

روبي ادريس الرفادي

تحت اشراف

د. عزة الصديق قريو

د. خديجة عوض حرويس

قدمت هذه الرسالة استكمالاً لمتطلبات الحصول على درجة الماجستير في

طب الاسنان الوقائي والاجتماعي

جامعة بنغازي

كلية طب وجراحة الاسنان

يناير 2018