



بسم الله الرحمن الرحيم

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مسئولية عن محتوى هذه الرسالة.

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# **“Effect of Trait Anxiety in Women on Oral Health Status and Oral Health Care-Seeking Behavior: A Cross-Sectional Study”**

Thesis

Submitted to the Department of Pediatric Dentistry and Dental Public Health,  
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By:

**Mariam Ayman Amin Sharaf**

Demonstrator of Dental Public Health, Department of Pediatric Dentistry and  
Dental Public Health, Faculty of Dentistry, Ain Shams University

*(B.D.S, Faculty of Dentistry, Ain Shams University- 2014)*

**Faculty of Dentistry  
Ain Shams University  
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## **Supervisors:**

### **Assoc. Prof. Dr. Amira Saad Badran**

Associate Professor of Pediatric Dentistry and Dental Public Health

Faculty of Dentistry

Ain Shams University

### **Assoc. Prof. Dr. Reham Khaled Abou El Fadel**

Associate Professor of Pediatric Dentistry and Dental Public Health

Faculty of Dentistry

Ain Shams University

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*I dedicate this work to my super MOM,  
Who never ceased to encourage and support me,*

*My lovely sister,  
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*My dear husband,  
Who has always supported me wholeheartedly,*

*&*

*My friends,  
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times.*

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## *List of Abbreviations*

*-In alphabetical order-*

<b>Abbreviation</b>	<b>Full term</b>
<b>AB</b>	Awake Bruxism
<b>ADA</b>	American Dental Association
<b>ANOVA</b>	Analysis of variance
<b>AOR</b>	Adjusted Odds Ratio
<b>BoP</b>	Bleeding on Probing
<b>CAL</b>	Clinical Attachment Loss
<b>CAT</b>	Caries-risk Assessment Tool
<b>CEJ</b>	Cemento-Enamel Junction
<b>CI</b>	Confidence Interval
<b>CMDs</b>	Common Mental Disorders
<b>CPI</b>	Community Periodontal Index
<b>CPITN</b>	Community Periodontal Index and Treatment Needs
<b>CRA</b>	Caries Risk Assessment
<b>DALYs</b>	Disability Adjusted Life Years
<b>DA</b>	Dental Anxiety
<b>DM</b>	Diabetes Mellitus
<b>DMFT</b>	Decayed, Missed, Filled Teeth
<b>FD-ASU</b>	Faculty of Dentistry-Ain Shams University
<b>GAD</b>	Generalized Anxiety Disorder
<b>GBD</b>	Global Burden of Disease
<b>GDP</b>	Global Domestic Product
<b>GERD</b>	Gastro-Esophageal Reflux Disease
<b>HPA</b>	Hypothalamic-Pituitary-Adrenal axis
<b>HSB</b>	Health Care-Seeking Behavior

<b>Ig</b>	Immunoglobulin
<b>KS</b>	Kolmogorov-Smirnov test
<b>mm</b>	Millimeter
<b>NCD</b>	Non-Communicable Disease
<b>OCD</b>	Obsessive Compulsive Disorder
<b>OR</b>	Odds Ratio
<b>PMR</b>	Partial Mouth Recording
<b>PPD</b>	Periodontal Pocket Depth
<b>PTSD</b>	Post-Traumatic Stress Disorder
<b>REC</b>	Research Ethics Committee
<b>SA</b>	State Anxiety
<b>SB</b>	Sleep Bruxism
<b>SD</b>	Standard Deviation
<b>SES</b>	Socioeconomic Status
<b>STROBE</b>	Strengthening the Reporting of Observational Studies in Epidemiology
<b>STAI-T</b>	State-Trait Anxiety Inventory – Trait subscale
<b>SW</b>	Shapiro-Wilk test
<b>TA</b>	Trait Anxiety
<b>WHO</b>	World Health Organization
<b>YLD</b>	Years Lived with Disability
<b>YLL</b>	Years of Life Lost

# Introduction

Women's health has emerged as a fundamental research field in recent years. Gender disparities are observed globally in social roles, attitudes and behavioral factors which reflect on individuals' health status.<sup>1</sup> Recently, there has been a focus on gender-related oral health disparities which are observed in the different rates of oral diseases and tooth loss among men and women.<sup>2</sup> Women also face access barriers to oral health services and consequently have higher rates of unmet dental needs.<sup>3</sup>

Similarly, mental health problems have emphasized vast differences between men and women starting from adolescence. For example, constant fear, uneasiness, and discomfort are usually more observed among women, as they generally experience internalizing disorders that manifest as depression and anxiety more than men. Differences are also noticed between men and women in their coping strategies and their personal vulnerabilities.<sup>4</sup>

Based on personality research, certain personality factors and traits, such as neuroticism and trait anxiety, increase the vulnerability of individuals to a range of stress-induced psychopathologies, such as depression and anxiety disorders.<sup>5</sup> This is because individuals with high trait anxiety tend to be in a constant state of hyperarousal, especially when exposed to stress.<sup>6</sup> Women are, as well, more prone to have high trait anxiety than men.<sup>7,8</sup>

Several physical morbidities have been shown to co-exist with mental health problems, such as diabetes mellitus, cancer, and cardiovascular diseases. Oral health is closely linked to many non-communicable diseases including mental disorders, however, the relationship between mental health and oral health has not been given due attention as other morbidities.<sup>9</sup>

## INTRODUCTION

Earlier research on oral health has concentrated on risk factors related to biology and behavior, however, psychosocial factors have emerged, lately, as major determinants of oral health.<sup>10</sup> Despite that, research examining the relationship between oral health and those factors, including personality traits, is still scarce.

Accordingly, this study was conducted to investigate the relationship between a common personality trait, trait anxiety, and oral health status and oral health care-seeking behavior of Egyptian women.

# Literature Review

## 1- Mental health and psychological well-being

### *1.1 Women's mental health and psychological well-being*

In recent years, gender medicine has gained significant focus as gender disparities became more broadly observed in the field of health sciences.<sup>1</sup> Gender is a social construct that refers to characteristics of men, women, and children of both sexes, including their social roles, behaviors, norms, and social relationships with each other.<sup>11</sup>

Gender is not only regarded as a major determinant of health through impacting health status, but it also influences the experience and perception of health and disease by individuals. It also plays a major role in decision-making regarding health policies, designing health programs, and delivering health services.<sup>12</sup>

Women's health, in particular, has been an emerging concept in the disciplines of public health, medicine, oral health, social studies, and psychology.<sup>13</sup> Women's health encompasses the physical and/or mental health issues that uniquely affect women or are more prevalent among them, and have different manifestations, clinical presentation, or consequences among women when compared to men.<sup>14</sup> Women's health has gained wide attention as vast differences exist between men and women in the biological, behavioral and social aspects of their lives, which ultimately impact their physical and psychological health status in distinct ways.<sup>1</sup>

Mental health problems, *per se*, represent a global public health challenge due to their rising prevalence<sup>15</sup> and the major morbidities and disabilities

associated with them.<sup>16</sup> Common mental disorders (CMDs) are conditions characterized by irritation, forgetfulness, insomnia, fatigue, loss of focus, in addition to two major conditions; anxiety and depressive disorders.<sup>17,18</sup>

Furthermore, from a socioeconomic perspective, where economic disadvantage and caregiving play a major role, women are still more prone to stress.<sup>19</sup> Globally, the majority of women are survivors of intimate partner and domestic violence, with one in every three women having faced physical or sexual violence<sup>20</sup>, and commonly end up being a single parent.<sup>19</sup> Additionally, women are more prone to eating disorders and the use of medical drugs due to their longer life expectancy.

In many cultures, women are the responsible party for meal preparation, which allows frequent access to food and hence, sustained bacterial flora for caries development and other oral diseases.<sup>19</sup> Frequent access to food that is high in sugar and fats could also lead to obesity, which is a major risk factor for many diseases, such as cardiovascular diseases, musculoskeletal diseases, and some cancers.<sup>21</sup> All those causes of stress create an allostatic load that influences host immune responses and disrupts the ability of the body to fight diseases.<sup>19</sup>

### ***1.2 Global burden of mental disorders***

The essence of public health lies in promoting and protecting the health of populations<sup>22</sup>, and in order to do so, information regarding populations' health status should be obtained to identify "***the burden of the disease***". The process of measuring the disease burden involves quantifying the physical and psychological impacts of diseases, health determinants, and risk factors in specific or at-risk groups, and closely monitoring the disease trend over a

specific period of time.<sup>23</sup> This is crucial to inform policymakers about the size of health problems to make relevant decisions concerning health systems.<sup>23</sup>

Disability-adjusted life years (DALYs) have emerged as the main metric of the global burden of disease (GBD) study. DALYs measure health gaps by estimating disease morbidity and mortality by measuring Years of Life Lived with Disability (YLDs) and Years of Life Lost (YLLs) due to death before the estimated life expectancy of the individual, respectively, and the sum of both components is considered the measure of health gap.<sup>23,24</sup> This quantification process allows the comparison of disease burden by region, gender, and age, which aids in highlighting the presence of health inequalities.<sup>23</sup>

Mental health disorders contribute to the global burden of disease by more than 10% prevalence.<sup>25</sup> Among the factors that determine anxiety disorders are age, region, and gender. The variation in the global prevalence of anxiety disorder by region in 2015 is shown in (*Fig.1*).<sup>17</sup> In 2019, anxiety disorders were responsible for 28.7 million YLD, contributing with 3.34% to total YLD.<sup>26</sup> In 2010, anxiety disorders caused far more disability than diabetes mellitus (DM), which ranks the 9<sup>th</sup>, stroke which ranks the 38<sup>th</sup>, and other severe mental health problems such as schizophrenia which ranks the 18<sup>th</sup> cause of global non-fatal disability. The disability associated with anxiety was also found to be six times that of all cancers combined, and fifteen folds higher than the disability caused by HIV/AIDS or malaria.<sup>27</sup>