ENSIGN GLOBAL UNIVERSITY,

KPONG, EASTERN REGION, GHANA

FACULTY OF PUBLIC HEALTH

DEPARTMENT OF COMMUNITY HEALTH

PREVALENCE AND ASSOCIATED FACTORS OF ORAL HEALTH PROBLEMS ON THE OVERALL HEALTH AND WELL-BEING OF PEOPLE IN THE HO MUNICIPALITY, GHANA

BY

NAME: DZIEDZORM PEACE KUKUBOR

INDEX NO: 247100299

NOVEMBER, 2025

ENSIGN GLOBAL UNIVERSITY,

KPONG, EASTERN REGION, GHANA

THE EFFECT OF POOR ORAL HEALTH ON THE OVERALL HEALTH AND WELL-BEING OF PEOPLE IN THE HO MUNICIPALITY, GHANA

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DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma at Ensign Global University, Kpong or any other educational institution, except where due acknowledgment is made in the thesis.

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PROF. STEPHEN MANORTEY …… ……

(Head of Academic Program) Signature Date

DEDICATION

This work is dedicated to my husband and children.

ACKNOWLEDGMENTS

This work is dedicated firstly to God Almighty, in gratitude for the gift of life and strength to complete this work.

I wish to extend my deepest gratitude to my academic supervisor, Prof. Stephen Manortey from the Department of Public Health, Ensign Global University, for his steadfast support and encouragement throughout the duration of my study.

I am also profoundly grateful to my Research Assistant and all my respondents, who significantly contributed to the accomplishment of this work.

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DEFINITION OF TERMS

To provide clarity and consistency, the following key terms are defined in the context of this study:

Oral Health: A state of being free from chronic mouth and facial pain, oral and throat cancer, oral infection, periodontal disease, tooth decay, tooth loss, and other diseases that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial well-being (WHO, 2022).

Poor Oral Health: The presence of oral conditions such as untreated dental caries, gingivitis, periodontitis, tooth loss, bad breath, or oral pain that negatively affect an individual's oral function, appearance, and quality of life.

Overall Health: The overall physical, mental, and social well-being of a person, not just the absence of disease or illness (WHO, 2020). This study looks at how oral health affects nutrition, speech, self-esteem, and systemic health issues, including diabetes and heart disease.

Well-Being: A multidimensional concept that refers to an individual's perceived quality of life, including emotional, psychological, and social aspects, as well as life satisfaction and ability to perform daily activities (Diener *et al..*, 2018).

Oral Health-Seeking Behavior: The actions and decisions individuals make in response to oral health problems, including preventive practices (e.g., brushing, flossing, dental check-ups) and curative actions (e.g., visiting a dentist when experiencing pain).

Quality of Life: The individual's perception of their position in life, in the context of the culture and value systems in which they live, in relation to their goals, expectations, and concerns (WHOQOL Group, 1998). In this study, it refers to how oral health impacts daily living and psychosocial well-being.

Ho Municipality: The administrative capital of the Volta Region of Ghana, with an estimated population of approximately 180,420 (GSS, 2021), serves as the geographic focus of this research.

Respondents: Residents of Ho Municipality aged 18 years and above who participated in the study by completing the survey questionnaire.

LIST OF ABBREVIATIONS

CI – Confidence Interval

COVID-19 – Coronavirus Disease 2019

GHS – Ghana Health Service

GIS – Geographic Information System

HBM – Health Belief Model

KAP – Knowledge, Attitudes, and Practices

L.I – Legislative Instrument

MOH – Ministry of Health

NCDs – Non-Communicable Diseases

NHIS – National Health Insurance Scheme

SCT – Social Cognitive Therapy

SDG – Sustainable Development Goals

SPSS – Statistical Package for the Social Sciences WHO

– World Health Organization

ABSTRACT

Oral health is a vital component of general health and quality of life, yet it remains one of the most neglected aspects of public health in developing countries. This study examined the effect of poor

oral health on the overall health and well-being of people living in the Ho Municipality of Ghana. Specifically, it sought to assess the prevalence of oral health problems, identify factors associated with poor oral health and well-being, and determine the oral health-seeking behavior of residents. A descriptive cross-sectional design was adopted, involving 461 respondents selected through a multistage sampling technique. Data were collected using structured questionnaires and analyzed using descriptive statistics, chi-square tests, and logistic regression at a 95% confidence level.

The findings revealed that more than half of the respondents (54.7%) had experienced at least one oral health problem, with mouth odor (15.8%), gum disease (13.5%), oral ulcers (13.0%), and tooth decay or loss (12.4%) being the most common. Although socio-demographic and behavioural factors such as age, occupation, income, and tobacco use showed observable trends with well-being, none were statistically significant ($p > 0.05$). The study further found low preventive oral health-seeking behaviour, with only 28.4% visited a dentist more than four times a year, and 23.6% had never visited a dentist. Additionally, 22.8% never brushed their teeth, and only 33.4% used fluoride toothpaste.

The study concludes that oral health problems are prevalent in the Ho Municipality and are influenced by poor oral hygiene practices, limited awareness, and inadequate access to dental care. It recommends strengthened oral health education, integration of oral health into primary healthcare, and expansion of the National Health Insurance Scheme to cover basic dental services.

Keywords: Oral health, Well-being, Health-seeking behavior, Ho Municipality, Ghana

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Oral health is a fundamental component of overall health and well-being, enabling individuals to perform essential functions such as eating, speaking, and socializing without discomfort or embarrassment. The World Health Organization (WHO) defines oral health as the state of the mouth, teeth, and orofacial structures that support individuals in participating in society and achieving their potential. Despite its significance, oral diseases remain among the most prevalent noncommunicable diseases globally, affecting approximately 3.5 billion people (WHO, 2023). These conditions include dental caries, periodontal diseases, tooth loss, and oral cancers, all of which can profoundly impact an individual's quality of life and general health (Petersen *et al..,* 2020).

In developed countries, substantial progress has been made in improving oral health outcomes through preventive measures, public health initiatives, and access to dental care services. For instance, the introduction of water fluoridation programs in the 1940s significantly reduced the incidence of dental caries in the United States, decreasing cavities by approximately 25% on average (Whelton *et al..,* 2019). This public health measure has been particularly beneficial for low-income communities with limited access to dental care. Additionally, recent studies have highlighted the broader health implications of oral hygiene practices; for example, flossing at least once a week has been associated with a reduced risk of ischemic stroke by over 20%, underscoring the interconnectedness of oral health and systemic health outcomes (Fellows *et al..,* 2022).

Conversely, developing countries continue to face significant challenges in addressing oral health issues. Limited access to dental care services, inadequate public health infrastructure, and socioeconomic disparities contribute to the high prevalence of oral diseases in these regions. The WHO's Global Oral Health Status Report emphasizes that oral diseases disproportionately affect the most vulnerable and disadvantaged populations, including those with low incomes, limited education, and restricted access to healthcare services. This pattern of inequality mirrors other noncommunicable diseases, highlighting the need for integrated and equitable health interventions (Global Health Organization, 2023).

In Sub-Saharan Africa, the burden of oral diseases is particularly pronounced. Factors such as limited availability of dental professionals, high costs of treatment, and lack of awareness about preventive measures exacerbate the situation. The WHO reports that severe gum disease, a major cause of tooth loss, affects approximately 1 billion people worldwide, with a significant proportion residing in low- and middle-income countries (WHO, 2023). Moreover, the incidence of oral cancers remains high, with about 380,000 new cases diagnosed annually, further emphasizing the critical need for comprehensive oral health strategies in the region (WHO, 2023).

Focusing on Ghana, the oral health landscape reflects many of the challenges observed across SubSaharan Africa. Limited access to dental care services, particularly in rural areas, coupled with socioeconomic barriers, contributes to the high prevalence of oral diseases (Aida *et al..,* 2022). Studies have shown that a significant portion of the Ghanaian population has never visited a dentist, indicating substantial unmet needs for dental care (Hewlett *et al..,* 2022; Blankson *et al..,* 2022). Additionally, self-reported oral health problems, such as toothaches and swollen gums, are common, suggesting a pervasive impact on individuals' daily lives and well-being (Babu, 2019).

In the Ho Municipality, these challenges are further compounded by specific local factors. An exploratory study among school children in the area revealed that a significant percentage had calculus or bleeding gums, yet only a small fraction had ever visited a dentist (Thakur *et al..*, 2024). This finding points to limited oral health-seeking behavior and underscores the need for targeted oral health education and accessible dental services within the community.

Understanding the effect of oral health on overall well-being and the factors influencing oral health-seeking behavior is essential for developing effective interventions in the Ho Municipality. Poor oral health can lead to pain, discomfort, and functional impairments, affecting nutrition, speech, and self-esteem. Furthermore, the social and economic impacts, such as missed school or workdays and financial burdens associated with treatment, can significantly diminish quality of life. By exploring these dynamics within the local context, this study aims to contribute to the broader discourse on improving oral health outcomes in Ghana and inform policies that promote equitable access to dental care services.

1.2 Problem Statement

Oral health is a critical component of overall well-being, influencing essential functions such as eating, speaking, and social interaction. Despite its significance, oral diseases remain a severe and neglected public health burden in Ghana. National data reveals a stark care gap: while 29% of adults experienced oral pain or discomfort in the past year, a staggering 84.9% have never received dental care, with this figure rising to 91.3% in rural areas (WHO Factsheet, 2023). The Ho Municipality reflects these national challenges, with preliminary studies indicating a high prevalence of oral diseases like calculus and bleeding gums among its population, alongside alarmingly low dental visitation rates.

However, while the existence of this problem in Ho Municipality is recognized, there is a critical lack of understanding regarding its specific impact and the underlying behavioral drivers. The consequences of untreated oral diseases are profound, leading not only to pain and infection but also to complications in managing systemic conditions like diabetes and diminished quality of life and productivity. Therefore, the main focus of this study is to specifically investigate the effect of poor oral health on the overall health and well-being of the adult population in Ho Municipality and to identify the key factors including socio-economic, behavioral, and systemic barriers that shape their oral health-seeking behavior. Without this localized and detailed evidence, interventions risk being generic and ineffective. This study seeks to fill this critical knowledge gap by providing empirical data to inform targeted and effective public health actions to improve oral health outcomes and, by extension, the overall well-being of the community.

1.3 Rationale of the Study

This study is justified by its potential to generate actionable evidence with significant relevance for public health practice, policy, research, and education in Ghana. By investigating the effect of poor oral health on overall well-being and the associated health-seeking behaviors in the Ho Municipality, the findings will provide the local health directorate with critical data to design targeted community-level interventions, such as focused health promotion and optimized resource allocation for dental care. For health policy, the results will offer empirical grounds to advocate for the integration of essential dental services into the National Health Insurance Scheme (NHIS), thereby addressing a major financial barrier to care. The research will also fill a significant knowledge gap in the literature, providing a baseline for future studies and informing the curriculum for health training institutions, ensuring that the next generation of practitioners is better equipped to address oral health as a component of holistic care. Ultimately, this study is a

necessary step toward developing evidence-based, multi-level strategies to improve oral health outcomes and, consequently, the overall quality of life for the population.

1.4 Conceptual Framework

The conceptual framework for this study, adapted from Ahonen et al. (2022), provides a comprehensive model for understanding the multifaceted factors that influence oral health and overall well-being in the Ho Municipality. It illustrates that an individual's oral health status is not an isolated issue but is deeply embedded within a network of socio-economic, behavioral, and psychological determinants. At the foundation of this model are the Driving Determinants, which include fundamental characteristics such as age, sex, education, occupation, and income. These factors form the backdrop against which all other health behaviors are formed, as they shape an individual's resources, opportunities, and awareness. For instance, a person's level of education influences their health literacy, while their income directly affects their ability to afford dental care and healthy food, setting the stage for their potential oral health outcomes.

These driving determinants then exert their influence through a set of Mediating Factors, which act as the primary mechanisms leading to health outcomes. This mediation occurs through two interconnected pathways. The first is through Knowledge and Attitudes, where a person's awareness of oral health principles and their beliefs shape specific behaviors. This includes their consumption of sugary beverages, their commitment to regular inter-dental cleaning, and their overall oral health-seeking behavior. The second pathway involves the direct Disease Condition and Psychosocial Function. Here, the physical manifestation of oral diseases such as tooth decay or gum disease directly impacts an individual's psychological state and social interactions. Pain from a toothache can cause stress and anxiety, while visible dental problems can lead to embarrassment and social withdrawal, thereby affecting psychosocial well-being.

Ultimately, these mediating factors converge to determine the two core outcomes of the framework: Oral Health and Well-being. The state of one's oral health is the direct result of the interplay between the driving determinants and the mediating factors. This oral health status, in turn, has a profound effect on the individual's overall well-being, conceptualized in this study as a multidimensional measure of quality of life encompassing physical, emotional, and social dimensions. Poor oral health diminishes well-being by causing physical discomfort, hindering nutrition, reducing self-confidence, and impairing social and professional functioning. While not explicitly shown with an arrow, the framework implies a cyclical relationship, where poor oral health and diminished well-being can further exacerbate negative attitudes and deplete financial resources, creating a vicious cycle of health disparity. This model thus provides a holistic lens through which the study's findings on prevalence, associated factors, and health-seeking behavior in Ho Municipality can be analyzed and understood.

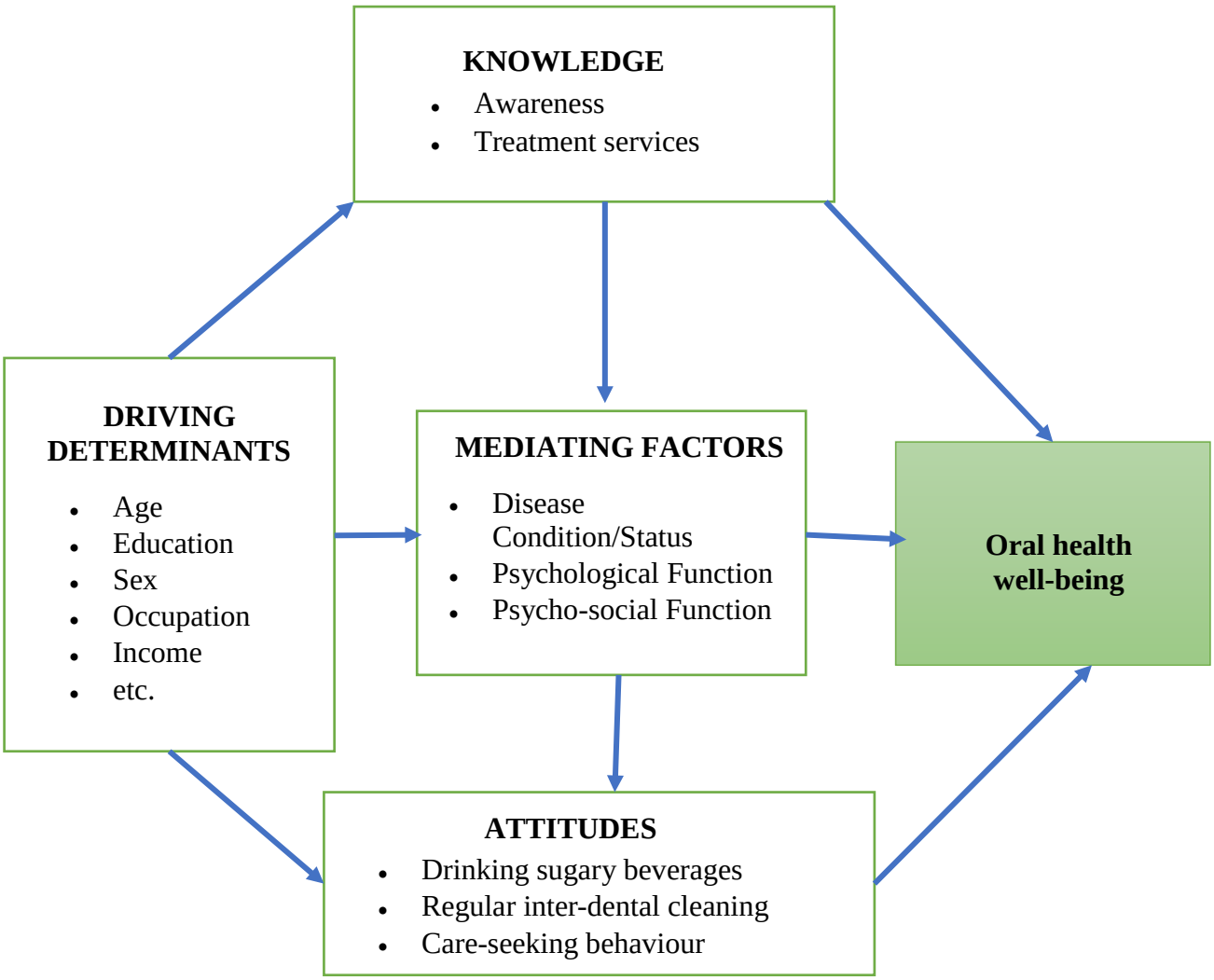

Figure 1: Conceptual Framework

Source: Adapted from (Ahonen *et al.*., 2022)

1.5 Research Questions

1. What is the prevalence of poor oral health and well-being in the Ho Municipality?
2. What are the factors associated with poor oral health and well-being in the Ho Municipality?
3. What is the oral health-seeking behavior of the people living in the Ho Municipality?

1.6. General objective

To investigate the effect of poor oral health on the overall health and well-being of people in the Ho Municipality in the Volta Region of Ghana.

1.7 Specific Objectives

1. To determine the prevalence of poor oral health and well-being in the Ho Municipality
2. To assess the factors that are associated with poor oral health and well-being in the Ho Municipality.
3. To determine the oral health-seeking behavior of people living in Ho Municipality.

1.8 Profile of the Study Area:

The Ho Municipal is one of the five (5) Municipalities in the Volta Region of Ghana. It was established by a Legislative Instrument (L.I) 2074 of 2012. Municipality has Ho as its capital, which also serves as the capital and economic hub of the Volta Region. It is located between latitudes 6^{o} 20' N and 6^{o} 55' N and longitudes 0^{o} 12'E and 0^{o} 53'E. The Municipality shares boundaries with Adaklu and Agotime-Ziope Districts to the South, Ho West District to the North and West and the Republic of Togo to the East. Its total land area is 2,361 square kilometers, thus representing 11.5 % of the region's total land area.

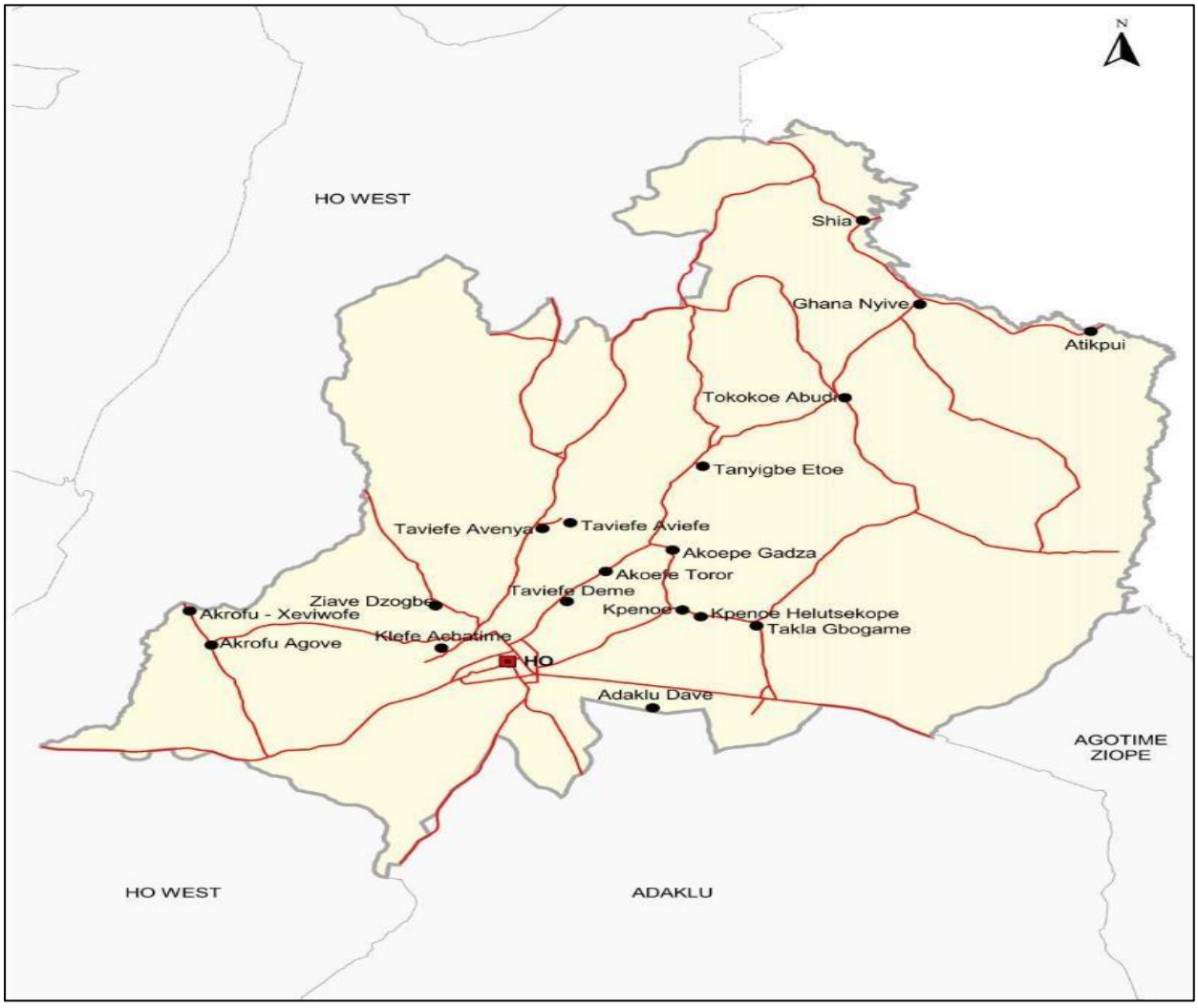

Figure 2: Map of Ho Municipality in the Volta Region of Ghana

1.9 Scope of Study

This study focused on assessing the prevalence, impacts, and determinants of poor oral health among residents of the Ho Municipality in Ghana. Specifically, it examined the common oral health problems experienced by residents, such as dental caries, periodontal disease, and tooth loss, and explored how these conditions affect individuals' physical, social, and economic wellbeing. In addition, the study investigated key socioeconomic, behavioral, and systemic factors

contributing to poor oral health, including income levels, educational attainment, oral hygiene practices, dietary habits, and access to dental care services.

The scope also extended to evaluating oral health-seeking behaviors, with particular emphasis on whether residents adopt preventive practices or only seek treatment when symptoms become severe. The study covered both male and female respondents across different age groups, educational backgrounds, and occupational categories, thereby ensuring representation of diverse perspectives within the municipality.

Geographically, the study was limited to the Ho Municipality and does not capture the experiences of individuals outside this setting. Methodologically, the study employed a cross-sectional descriptive survey design, using structured questionnaires as the primary data collection tool. The findings, therefore, represent self-reported data within the specific period of data collection and may not be generalizable to other regions in Ghana.

1.10 Organization of Report

This research report is organized into six main chapters, each structured to provide a logical flow from the background of the study to its conclusions and recommendations.

Chapter One introduces the study and presents the background to the problem, statement of the problem, research objectives and questions, significance of the study, scope, limitations, assumptions, and definitions of key terms. This chapter establishes the foundation for the research.

Chapter Two reviews relevant literature on oral health, its impacts on well-being, and oral healthseeking behavior. It highlights both theoretical and empirical works, identifies gaps in existing studies, and provides the conceptual framework that guided the research.

Chapter Three outlines the research methodology. It describes the study design, study site, population, sample size determination, sampling procedure, data collection instrument, pretesting and validity, data collection procedure, data handling and analysis, and ethical considerations.

Chapter Four presents the results and analysis of the study. This includes descriptive statistics, inferential statistics, and interpretations of findings in relation to the study objectives. Tables are used to enhance clarity.

Chapter Five provides the discussion of key findings. This chapter ties the entire report together by reflecting on the study objectives and how they were addressed.

Chapter Six presents conclusions and recommendations.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter reviews relevant literature on the effect of oral health on overall well-being and oral health-seeking behavior. It provides a theoretical foundation by discussing key models that explain health behavior and healthcare utilization. Additionally, empirical studies on the prevalence of poor oral health, factors contributing to poor oral health, oral health-seeking behavior, and the impact of oral health on general health are examined. The chapter also presents a conceptual framework that outlines the relationships between key variables in the study.

2.2 Empirical Review

2.2.1 Prevalence of Poor Oral Health

Oral health is a critical component of overall well-being, yet its neglect has led to a high prevalence of dental diseases globally, particularly in low- and middle-income countries. Empirical studies have highlighted the widespread nature of poor oral health across various regions, emphasizing the need for comprehensive public health interventions.

In Ghana, research focusing on schoolchildren aged 9 to 16 in Accra reported a dental caries prevalence of 13.4% and periodontal disease at 30.4% (Blankson *et al.*., 2022) . Another study indicated that 40.4% of participants had untreated dental caries, with 26.7% presenting with retained roots, showing significant variation among different districts (Bashir, 2022). Furthermore, a concerning statistic revealed that 96% of Ghanaian adults aged 35 to 44 years are affected by gum disease, and 40% of 12-year-olds suffer from decayed or missing teeth (Bashir, 2022). These findings underscore the substantial burden of oral diseases within the Ghanaian population.

Expanding the scope to Sub-Saharan Africa, the World Health Organization estimated that in 2019, 22.8% of individuals aged 15 years and older in the African Region suffered from severe periodontal disease, potentially leading to tooth loss (WHO, 2023).

Additionally, over 2.7 million West African adolescents aged 15 to 19 presented with oral disorders in 2019, with Nigeria accounting for the majority of these cases (Shomuyiwa & Bridge, 2023). These statistics highlight the significant oral health challenges faced by adolescents in the region.

In the Fanteawo district in Ghana, a 2004/2005 community survey revealed that 51% of respondents had experienced an oral health issue in the past six months, but only 35% sought treatment. The most common conditions reported included tooth decay (93.1%), pain (82.1%), and tooth loss (79.3%). These statistics highlight the widespread prevalence of oral health problems and the gap between the occurrence of issues and treatment-seeking behavior.

The high prevalence of oral diseases in these regions can be attributed to factors such as limited access to dental care, inadequate public health infrastructure, and socioeconomic disparities (Northridge *et al.*, 2020). For instance, in 2019, approximately 70% of Sub-Saharan African countries allocated less than US$1 per person annually for oral health care, indicating a low prioritization of oral health within national health budgets (WHO, 2023).

Moreover, the shortage of dental professionals exacerbates the situation. Across Africa, the number of dentists ranges from 1.77 to 0.03 per 10,000 population, and the number of dental technicians varies from 0.17 to 0.1 per 10,000 population. This scarcity limits the availability of essential dental services, particularly in rural and underserved areas (Foláyan *et al.*, 2025).

2.2.2 Factors Contributing to Poor Oral Health

Poor oral health is a significant global concern, affecting millions of people due to various socioeconomic, behavioral, environmental, and systemic health factors. Empirical studies across different regions have identified key contributors to oral health deterioration, highlighting disparities in access to dental care, hygiene practices, and public health interventions.

Socioeconomic status is a major determinant of oral health, as individuals from lower-income backgrounds often have limited access to preventive dental services and treatment. A study conducted in the US found that children from lower-income families were more likely to experience untreated dental caries due to financial constraints and a lack of awareness about oral health (Williams *et al..,* 2021). Similarly, a study in the United States revealed that low-income individuals were less likely to visit a dentist regularly, leading to an increased prevalence of periodontal diseases and tooth loss (Mills & Levin, 2022).

In Ghana, research by Deh *et al.*. (2022) found that rural populations faced significant barriers to accessing dental care, including high treatment costs and limited availability of dental facilities.

Behavioral factors also play a critical role in oral health outcomes. Poor oral hygiene, excessive consumption of sugary foods and drinks, tobacco use, and alcohol consumption are significant contributors to oral diseases. A study in Tanzania found that individuals with inadequate brushing habits and high sugar consumption had a higher incidence of dental caries (Dickson & Mweya, 2023). Additionally, tobacco users in Ghana were found to have a significantly higher prevalence of oral cancer and periodontal diseases compared to non-smokers (Prince *et al..,* 2024). In Ghana, a study by Marques *et al.*. (2022) highlighted that many individuals do not use fluoride toothpaste regularly, leading to a high prevalence of dental cavities, particularly among school-aged children.

Environmental and policy factors also influence oral health, particularly access to fluoridated water and nutritional food sources.

In Australia, regions with lower levels of water fluoridation reported higher rates of tooth decay among children, emphasizing the role of public health policies in promoting oral health (Kumar *et al.*, 2023). A study in Nigeria found that urban populations had better oral health outcomes due to higher exposure to fluoridated water and greater access to dental clinics, while rural populations suffered from inadequate fluoride intake and poor healthcare infrastructure (Uguru *et al.*, 2020). In Ghana, a study by Blankson *et al.*, (2022) found that limited government investment in oral health programs contributed to a lack of public awareness and insufficient preventive care measures.

Systemic health conditions further exacerbate poor oral health. Diseases such as diabetes and Sjögren's syndrome can reduce saliva production, leading to dry mouth and an increased risk of dental caries and gum disease (Kwabena-Adade *et al.*, 2025). A study in the United Kingdom found that diabetic patients had a higher prevalence of periodontal disease due to impaired immune responses and poor glycemic control (Rapone *et al.*, 2021). Similarly, research conducted in Ethiopia showed that individuals with chronic illnesses were less likely to seek dental care due to competing health priorities and financial limitations (Mohammed *et al.*, 2024). In Ghana, a study by Osei (2025) found that patients with hypertension and diabetes had a higher incidence of tooth loss and gum infections due to neglected oral hygiene and limited access to specialized dental care.

Mental health factors also contribute to poor oral health, as individuals suffering from depression and anxiety may neglect their oral hygiene routines. A study in Canada found that people with depression were more likely to experience dental decay and gum disease due to decreased motivation to maintain oral hygiene and irregular dental visits (Piercarlo *et al.*, 2024).

Similarly, research in Kenya found that individuals with mental health disorders were more likely to have untreated dental problems due to stigma and lack of access to specialized dental care (Imalingat, 2022). In South Africa, a study by Litheko (2024) identified a strong link between stress and poor oral health, with many individuals experiencing increased teeth grinding and oral infections due to high-stress levels.

Challenges within the healthcare system also play a significant role in oral health disparities. Limited dental workforce, high treatment costs, and inadequate dental insurance coverage prevent many individuals from seeking necessary care. A study in the United States found that lack of dental insurance was a major barrier to receiving dental treatment, with uninsured individuals experiencing higher rates of untreated cavities and gum disease (Mojtahedi, 2022). In Uganda, research by Nono *et al.*., (2024) showed that the shortage of trained dental professionals in rural areas led to poor oral health outcomes, as many people relied on traditional remedies instead of professional care. In Ghana, a study by Afortor (2024) highlighted that the uneven distribution of dental clinics and the high cost of treatment contributed to the underutilization of dental services, particularly among low-income populations.

2.2.3 Oral Health-Seeking Behavior of People

Oral health-seeking behavior refers to the practices and decisions individuals make regarding their oral health care, including preventive visits, treatment-seeking patterns, and attitudes toward professional dental services. Studies across various regions have highlighted multiple factors that influence this behavior, including socio-economic status, cultural beliefs, access to dental care, and perceived severity of oral health conditions.

Socioeconomic factors significantly impact oral health-seeking behavior. Research in India found that people from higher-income backgrounds were more likely to visit a dentist regularly for

preventive care, whereas those from lower-income groups only sought dental services when experiencing severe pain or complications (Gholami, 2024). A study in Brazil confirmed similar findings, revealing that economic constraints discouraged regular dental visits, leading to delayed treatment and worsened oral health outcomes (Poudel *et al.*., 2018). In Ghana, a study by Acquah (2024) found that the cost of dental care was a major barrier for many individuals, resulting in a high prevalence of self-medication and reliance on home remedies instead of professional treatment.

Cultural and traditional beliefs also shape oral health-seeking behavior. In some African communities, oral diseases are often perceived as being caused by supernatural forces rather than poor hygiene, leading individuals to seek treatment from traditional healers instead of dentists (Osuh *et al.*., 2023). A study in Nigeria by Ukachukwu *et al.*. (2024) found that many people preferred herbal remedies and extractions performed by local healers over modern dental interventions, particularly in rural areas. Similarly, research conducted in Libya highlighted that cultural beliefs about tooth extraction being the only effective solution for oral pain led to high rates of unnecessary extractions and reluctance to seek preventive care (Elhaji, 2023). In Ghana, Berchie (2022) observed that misconceptions about dental treatments, including fears of pain and excessive costs, discouraged individuals from visiting dental clinics, especially in rural communities.

Access to dental care services also plays a crucial role in determining oral health-seeking behavior. Studies in Australia have shown that individuals living in areas with a higher concentration of dental facilities are more likely to seek regular check-ups, whereas those in underserved areas have lower dental visit rates (Crocombe *et al.*., 2022).

In Malawi, Mpachika (2021) found that long travel distances to dental clinics deterred many individuals from seeking care, resulting in a higher burden of untreated oral diseases.

Similarly, a study in Uganda revealed that the lack of dental professionals in rural areas contributed to poor oral health-seeking behavior, as many individuals could not afford the time or cost required to travel to urban dental facilities (Ocwia *et al..*, 2021).

In Uganda, Ndawula (2022) found that limited dental infrastructure, particularly in the northern and rural regions, prevented many individuals from accessing timely oral health care, leading to a higher incidence of advanced dental conditions.

Perceived severity and awareness of oral health issues also influence health-seeking behavior. Research in Australia showed that individuals who understood the consequences of untreated dental diseases were more likely to visit a dentist for preventive care, whereas those with low awareness only sought treatment during emergencies (Armfield & Spencer, 2019).

A study in South Africa by Peltzer *et al.*. (2018) found that many individuals did not recognize the early symptoms of gum disease or cavities, resulting in delayed treatment and complications, such as tooth loss. Similarly, in Ghana, Osei *et al.*. (2021) reported that a lack of oral health education contributed to poor health-seeking behavior, with many people failing to prioritize dental care until they experienced severe pain or visible dental damage.

Psychological factors, including fear and anxiety, also play a role in oral health-seeking behavior. Research in the United Kingdom found that dental anxiety was a major reason why individuals avoided regular dental visits, often resulting in more severe oral health conditions requiring complex treatments (Taylor *et al..*, 2022). In Canada, Thompson *et al.*. (2019) discovered that individuals with high dental anxiety were more likely to rely on painkillers rather than seek

professional care. In Ghana, Boakye *et al.*. (2023) found that many individuals associated dental procedures with excessive pain and discomfort, leading to avoidance of dental clinics and increased reliance on traditional methods for managing oral health issues.

Healthcare system challenges also affect oral health-seeking behavior. In the United States, Dye *et al.*. (2021) found that individuals without dental insurance were less likely to visit a dentist regularly, leading to higher rates of dental caries and periodontal disease. A study in Nigeria by Adomako *et al.*. (2020) found that insufficient government funding for oral health services resulted in fewer public dental clinics, making it difficult for people to access affordable care. In Ghana, research by Adjei *et al.*. (2022) found that a shortage of dental professionals, combined with long waiting times at public hospitals, discouraged people from seeking timely dental care, resulting in increased cases of severe oral infections and tooth loss.

2.2.4 Effect of Poor Oral Health on Overall Health

Poor oral health has been linked to various systemic diseases, including cardiovascular diseases, diabetes, respiratory infections, and adverse pregnancy outcomes. Several studies across different regions have demonstrated how untreated oral conditions contribute to broader health complications, emphasizing the need for improved oral healthcare services and awareness.

A growing body of evidence highlights the association between oral health and cardiovascular diseases. A study conducted in the United States by Lockhart *et al.*. (2021) found that individuals with periodontal disease had an increased risk of atherosclerosis and heart disease due to the chronic inflammation and bacterial spread from the oral cavity to the bloodstream. Similar findings were reported in the United Kingdom, where Humphrey *et al..*, (2020) observed that poor oral hygiene contributed to elevated levels of C-reactive protein, a biomarker of cardiovascular risk. In

sub-Saharan Africa, a study in Nigeria by Akinyamoju *et al..,* (2019) confirmed that untreated gum disease was a significant predictor of hypertension among adults, underscoring the importance of oral health interventions in cardiovascular risk management. In Ghana, research by Bediako *et al.*. (2022) found that individuals with poor oral hygiene habits had a higher prevalence of heart-related conditions, emphasizing the systemic impact of oral infections.

Diabetes is another condition strongly linked to oral health. Research in Canada by Lalla and Papapanou (2021) found that periodontal disease exacerbated insulin resistance and poor glycemic control in diabetic patients. A study in South Africa by Moodley *et al..,* (2018) further highlighted that individuals with untreated periodontitis had a higher likelihood of developing diabetes-related complications, such as neuropathy and kidney disease. In Ethiopia, Yohannes *et al..,* (2020) found that diabetic patients with poor oral hygiene were more likely to suffer from severe gum infections, leading to tooth loss and further complications in food intake and nutrition. A Ghanaian study by Kusi *et al..,* (2022) demonstrated that oral health education and improved access to dental care enabled diabetic patients to achieve better disease management, resulting in reduced hospitalization rates.

Respiratory infections have also been linked to poor oral health. A study in Brazil by Scannapieco *et al.*. (2019) found that individuals with poor oral hygiene faced a higher risk of developing pneumonia due to bacteria from the oral cavity being aspirated into the lungs. Similarly, in India, Kumar *et al.*. (2021) observed that elderly individuals with untreated dental infections were more susceptible to respiratory tract infections, especially those in nursing homes. In Kenya, a study by Odhiambo *et al.*. (2020) revealed that oral bacteria contributed to the worsening of chronic respiratory diseases such as chronic obstructive pulmonary disease (COPD). In Ghana, research

by Asare *et al.*. (2022) indicated that children with severe dental caries experienced an increased incidence of respiratory infections, emphasizing the importance of early oral health interventions.

Poor oral health is also associated with adverse pregnancy outcomes. A study in the United States by Offenbacher *et al.*. (2021) demonstrated that pregnant women with periodontal disease were at a higher risk of preterm birth and low birth weight due to inflammatory responses affecting fetal development. In a study conducted in Tanzania, Mwakajoka *et al.*. (2019) found that untreated dental infections among expectant mothers led to increased cases of pregnancy complications, including gestational hypertension. Research in Ghana by Osei *et al.*. (2022) showed that maternal gum disease was linked to an increased risk of preterm delivery, with many cases attributed to limited access to oral healthcare during pregnancy.

Moreover, poor oral health affects nutritional status and overall quality of life. A study in Australia by Brennan *et al.*. (2020) found that individuals with missing or decayed teeth had difficulty chewing and digesting food, leading to malnutrition, especially among the elderly. In Nigeria, Adetunji *et al.*. (2021) observed that individuals with severe tooth loss had reduced dietary diversity, which negatively impacted their overall health. In Ghana, Mensah *et al.*. (2022) found that poor oral health significantly affected children's academic performance due to frequent absences from school caused by dental pain and infections.

2.3 Theoretical Review

This study is grounded in the Health Belief Model (HBM), a theoretical framework that explains health-seeking behavior through individual perceptions and beliefs (Rosenstock, 1974; Jones et al., 2023). The model posits that health behaviors are determined by an individual's perception of their susceptibility to a condition, the severity of that condition, the benefits of taking action, and the barriers to doing so (Champion & Skinner, 2008). These core constructs are activated by cues

to action and moderated by self-efficacy, which is an individual's confidence in their ability to successfully perform the behavior (Glanz et al., 2015). The HBM is particularly relevant for investigating oral health in resource-constrained settings like Ho Municipality, as it helps explain the discrepancy between health knowledge and health action, a common challenge in public health (Amoateng et al., 2023).

The HBM's constructs are directly operationalized in this study's variables. Perceived susceptibility and severity are measured through the investigation of the prevalence of selfreported oral health problems and their documented impacts on physical and psychosocial wellbeing (Kusi et al., 2022). The act of weighing perceived benefits against perceived barriers is central to our analysis of the factors associated with poor oral health, including financial constraints, geographical access, and cultural beliefs (Acquah, 2024; Osuh et al., 2023). Furthermore, the model's cues to action and self-efficacy components are explored through our detailed assessment of oral health-seeking behavior, identifying the triggers for dental visits and the confidence individuals have in navigating the healthcare system (Petersen, 2022).

By applying the Health Belief Model, this study provides a structured psychological framework to analyze the determinants of oral health behavior in Ho Municipality. This theoretical grounding moves the research beyond a descriptive account of oral health status and offers explanatory power for understanding why residents make specific health decisions (King et al., 2023). The findings will be crucial for designing evidence-based, targeted public health interventions that aim to shift key perceptions, reduce barriers, and stimulate effective cues to action, thereby improving oral health outcomes in the community (WHO, 2022).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This chapter presents the methodological approach adopted for the study. It outlined the research design, study area, population, sampling techniques, data collection instruments, and data analysis methods. The chapter also discussed the procedures used to ensure the validity and reliability of the study, as well as the ethical considerations observed during the research process. The methodology was designed to provide a systematic and structured approach to obtaining relevant data for analyzing the relationship between oral health and overall well-being while assessing the factors influencing oral health-seeking behavior among residents of Ho Municipality.

3.2 Study Design

This study employed a **community-based, descriptive cross-sectional design**. This design was selected because it facilitates the collection of data from a sample of the population at a single point in time to determine the prevalence and distribution of the variables of interest (Setia, 2016). The design is particularly suited to this study's primary objectives of assessing the prevalence of oral health problems, identifying associated factors, and describing oral health-seeking behaviors among residents of Ho Municipality. A key rationale for its use is its efficiency and practicality for providing a "snapshot" of the current oral health situation, which is essential for informing immediate public health planning and resource allocation (Wang & Cheng, 2020). Furthermore, the cross-sectional design is well-aligned with the analytical approach of the study, which seeks to examine associations between variables like socio-demographic factors and well-being status, even if causality cannot be established.

Despite its strengths, this design has inherent shortfalls that were acknowledged and mitigated where possible. The primary limitation is its inability to determine temporal sequence or establish

causal relationships between variables (Levin, 2022). For instance, while we can find an association between low income and poor oral well-being, we cannot conclusively state that low income *causes* poor oral health, as the direction of influence could be reversed or confounded by other unmeasured factors. Secondly, the reliance on self-reported data for oral health conditions and behaviors, rather than clinical examinations, introduces the potential for recall and social desirability bias (Fisher & Katz, 2020). Participants may underreport behaviors like tobacco use or overestimate their brushing frequency. To minimize these biases, the questionnaire was pretested, and data collection was conducted by trained assistants who ensured anonymity and a confidential environment for respondents.

3.3 Study Area

The study was conducted in Ho Municipality, the administrative capital of the Volta Region of Ghana. Ho Municipality is located in the southeastern part of Ghana and serves as a major economic, educational, and healthcare hub in the region. It is bordered by Adaklu District to the south, Ho West District to the west, and the Republic of Togo to the east. The municipality has a population of approximately 180,000 people, comprising diverse ethnic groups, including the Ewe, Hausa, and Akan communities.

Healthcare services in Ho Municipality are provided by both public and private facilities, with the Ho Teaching Hospital serving as the largest referral hospital in the region. There are also district hospitals, polyclinics, health centers, and private dental clinics that provide oral healthcare services. However, access to oral healthcare remains a challenge for many residents due to financial constraints, limited dental facilities, and cultural beliefs about dental treatment.

The municipality is characterized by both urban and peri-urban settlements, with significant differences in access to healthcare between these areas. Urban residents have better access to dental

care compared to those in rural or peri-urban areas. The study area provided an ideal setting for understanding how oral health influences overall well-being and the factors that determine oral health-seeking behavior among its residents.

3.4 Population of the Study

The population of this study comprised residents of Ho Municipality, including individuals from diverse socio-economic backgrounds, occupations, and age groups. The study targeted both males and females aged 18 years and above, as they are more likely to make independent healthcare decisions and provide informed responses regarding their oral health-seeking behavior.

The population included individuals from urban, peri-urban, and rural areas within the municipality to ensure a comprehensive understanding of the factors influencing oral health and well-being. Key sub-groups within the population included employed and unemployed individuals, students, traders, civil servants, and healthcare workers. Given the presence of both private and public healthcare facilities in Ho Municipality, the study also considered individuals who have sought dental care, as well as those who have never visited a dental facility.

The estimated population of Ho Municipality was approximately 180,000 people, according to the Ghana Statistical Service (2021). However, due to resource constraints, the study focused on a sample of this population, ensuring representation across different demographic groups to enhance the generalizability of findings.

3.5 Inclusion and Exclusion Criteria

3.5.1 Inclusion Criteria

Participants were included in the study if they met the following conditions:

1. Were aged 18 years and above and provided informed consent.

2. Were residents of Ho Municipality who had spent at least six months in the community, ensuring familiarity with local healthcare services and a stable presence in the study area.

3.5.2 Exclusion Criteria

Participants were excluded from the study under the following conditions:

1. Individuals below 18 years of age were excluded as they require parental consent and may not have full autonomy over their health-seeking decisions.
2. Individuals who did not reside in Ho Municipality or had lived there for less than six months were excluded to ensure responses reflected the experiences of long-term residents.
3. Individuals who refused to give informed consent or withdrew from the study at any stage were excluded from the final analysis.
4. Dentists, dental nurses, and other oral health professionals were excluded to avoid biased responses, as their expert knowledge could differ significantly from the general population's perceptions and experiences.

3.6 Sample Size

The sample size of a study is a section of the population that is drawn to make inferences or projections to the general population (Athey & Imbens, 2016). The sample size for this study was calculated using Cochran's (1977) formula:

$$n = \frac{Z^2 \times pq}{d_2}$$

Where:

- n = sample size
- Z = z-score for 95% confidence level = 1.96
- p = estimated proportion of the population, 50%
- q = the acceptable deviation from the assumed proportion (1-0.5 = 0.50),
- d = margin of error = 0.05

Therefore,

$$n = \frac{(1.96)^2 \times (0.5 \times 0.5)}{(0.05)^2} \cong 384$$

To accommodate a potential non-response rate of 20%, the final adjusted sample size was 461. Thus, a total of 384+(0.20×384) = 461 pregnant women were targeted for inclusion in the study.

2.7 Sampling Procedure

The study employed a multi-stage sampling technique to ensure a representative selection of respondents from different socio-economic and geographic groups within Ho Municipality. First, the Municipality was stratified into urban, peri-urban, and rural areas, ensuring the inclusion of diverse populations. Within each stratum, simple random sampling was applied to select households and individuals, thereby reducing selection bias. In cases where household surveys were conducted, systematic sampling was used, with every *third* household selected for participation.

To capture the experiences of individuals who had sought dental care, convenience sampling was employed at healthcare facilities, including hospitals, clinics, and dental care centers. This

combined approach strengthened the representativeness of the sample and enhanced the reliability and generalizability of the study findings.

3.8 Data Collection Instrument

The primary instrument for this study was a structured questionnaire, which was developed by the researcher through a comprehensive review of relevant literature on oral health and health-seeking behavior (e.g., Petersen et al., 2020; WHO, 2022). The questionnaire was designed to gather quantitative data aligned with the study's specific objectives and conceptual framework.

The final instrument consisted of **seven distinct sections** with a total of **38 closed-ended items** to ensure consistency in responses and facilitate data analysis. The structure and scoring of the questionnaire were as follows:

Section 1: Socio-Demographic Information (8 items). This section captured the "Driving Determinants" from the conceptual framework. Items included age, gender, marital status, educational level, occupation, monthly income, residential area, and NHIS status. Responses were primarily categorical (e.g., Male/Female, list of occupations) or numerical (age).

Section 2: Prevalence of Oral Health Problems (5 items). This section measured the "Disease Condition" and its prevalence. It included items on prior diagnosis of oral conditions, experience of specific symptoms in the past 12 months (e.g., toothache, bleeding gums), frequency of pain, tooth loss, and a self-rating of overall oral health status. Responses were binary (Yes/No), checklists, and ordinal scales (e.g., Never/Rarely/Sometimes/Often/Always).

Section 3: Effect of Oral Health on Well-Being (5 items). This section operationalized the core outcome of "Well-being." It used a 5-point Likert scale (1=Strongly Disagree to 5=Strongly Agree) for statements assessing the impact of oral health on pain, nutrition, self-confidence, work

productivity, and stress. A composite well-being score was generated by summing the responses to these five items.

Section 4: Factors Associated with Oral Health (10 items). This section captured "Mediating Factors," including behavioral practices and access factors. It contained items on brushing frequency, cleaning tools, fluoride toothpaste use, sugary food intake, tobacco and alcohol use, chronic illness, recent dental visits, distance to the nearest clinic, and perceived cost of care. Responses were categorical and ordinal.

Section 5: Oral Health-Seeking Behavior (5 items). This section focused on the "Attitude" of care-seeking. It included items on the first action during oral pain, the number of dental visits in the past year, reasons for not seeking care, satisfaction with services, and hypothetical behavior if services were cheaper/closer. Responses were multiple-choice and ordinal.

Section 6: Knowledge and Attitude (2 items). This section assessed general "Knowledge" of the oral-systemic health link and the "Attitude" towards preventive check-ups. Responses were binary (Yes/No/Not Sure).

Section 7: Open-Ended Questions (2 items). These items allowed for qualitative data on perceived causes of poor oral health and suggestions for improvement.

The questionnaire was pretested among a small group (n=20) with similar characteristics to the study population but not included in the final sample. This was done to check for clarity, flow, reliability, and validity. Ambiguous questions were rephrased based on the feedback, and the internal consistency of the Likert scale in Section 3 was found to be acceptable (Cronbach's Alpha > 0.7). The final tool was administered in English and, where necessary, translated verbally into the local language by trained research assistants to ensure comprehension.

3.9 Data Processing and Analysis

After data collection, the responses underwent processing and cleaning to ensure accuracy and completeness. The data were first checked for missing values, inconsistencies, and errors, and incomplete or invalid responses were excluded from the final dataset. The cleaned data were then coded and entered into the STATA statistical software package (*StataCorp, 2007. Stata Statistical Software. Release 18. StataCorp LP, College Station, TX, USA)* for analysis.

The analysis involved both descriptive and inferential statistics. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize participants' demographic characteristics, oral health status, and oral health-seeking behaviors. Inferential statistical tests, such as chi-square tests and logistic regression analysis, were performed to examine the relationships between oral health-seeking behavior and socio-economic factors.

A p-value of less than 0.05 was considered statistically significant.

The results were presented using tables, graphs, and charts to facilitate clear interpretation. The findings from the analysis formed the basis for drawing conclusions and making evidence-based recommendations aimed at improving oral health awareness and healthcare access within Ho Municipality.

3.10 Ethical Consideration

Before data collection commenced, ethical approval was obtained from the Ensign Global University Ethics Review Committee. The purpose of the study was clearly explained to all respondents, who were informed that participation was entirely voluntary and that there were no

benefits or losses associated with taking part or declining. Informed consent was obtained from participants in writing before they were enrolled in the study.

Participants were also informed of their right to withdraw from the study at any stage without facing any negative consequences. All information gathered was kept strictly confidential, and participants' anonymity was guaranteed. Unique coding mechanisms were employed to ensure that responses could not be traced back to individual participants, and only the research team had access to the data for analysis purposes.

3.11 Limitations of the Study

This study had several limitations that must be acknowledged. First, the cross-sectional design restricted the ability to establish causal relationships between poor oral health and overall wellbeing, as the findings only reflect associations. Second, reliance on self-reported data introduced the possibility of recall and social desirability biases, with some participants potentially under- or over-reporting their oral health behaviors and conditions. Third, the study was limited to residents of Ho Municipality, which may restrict the generalizability of the findings to other regions of Ghana with different socio-economic and healthcare contexts. Additionally, while the sample size was adequate for analysis, it may not have fully captured variations across all subgroups. Furthermore, the absence of clinical dental assessments meant that the study depended on selfreported symptoms rather than objective evaluations of oral health. Finally, certain groups, such as children and severely ill individuals, were excluded, limiting the broader applicability of the findings.

3.12 Assumptions

This study was conducted under several assumptions. It was assumed that all respondents provided honest and accurate information regarding their oral health status, behaviors, and healthcareseeking practices. The study also assumed that participants understood the questions in the survey as intended, particularly since some were administered in both English and local languages to minimize misinterpretation. Additionally, it was assumed that the sample of respondents from Ho Municipality was representative of the larger population, allowing the findings to reflect general trends within the community. Finally, the study assumed that the relationships observed between oral health, well-being, and health-seeking behavior were not significantly influenced by unmeasured external factors beyond the scope of the research.

CHAPTER FOUR:

4.0 RESULTS

4.1 Introduction

This chapter presents the study's findings on the impact of poor oral health on the overall health and well-being of people in the Ho Municipality. Data from 461 respondents were analyzed using descriptive statistics (frequencies, percentages, means, and standard deviations) and inferential

statistics (chi-square tests and regression analysis). The results are presented according to the study objectives.

4.2 Response Rate

Out of 480 questionnaires distributed among the projected respondents in the study area, 461 were successfully completed and returned, yielding a response rate of 96%.

4.3 Socio-Demographic Characteristics of Respondents

Table 4.1 below summarizes the socio-demographic information of the respondents. Out of the 461 total respondents, 56.8% were female, indicating a slight predominance of females in the study. This gender distribution suggests that women were more represented, possibly due to a greater willingness to participate in community-based surveys or higher availability during data collection. The respondents' ages ranged from 18 years and above, with a mean age of 46.61 ± 16.46 years, reflecting a mature adult population. The majority (45.99%) were aged 50 years and above, followed by those in the 18–29 years (19.96%) and 40–49 years (19.52%) categories. This distribution implies that a large proportion of participants were older adults who may be more prone to oral health problems such as tooth loss and gum disease.

A relatively balanced distribution was observed across educational levels. About 27.1% had attained secondary education, 26.5% had no formal education, 26.3% had basic education, while 20.2% had tertiary education. This shows that most respondents had at least some level of formal education, though a considerable proportion lacked formal education, which could influence awareness and oral health-seeking behavior. Employment categories were fairly evenly distributed. Students (20.4%), self-employed individuals (20.4%), and those classified as "others" (20.8%), which may include traders, artisans, or informal workers, formed the largest occupational

groups. Meanwhile, civil servants accounted for 19.5%, and unemployed individuals made up 18.9%. This suggests a mixed economic base among participants, representing both formal and informal employment sectors. A near-even distribution was recorded among marital categories, with 26.0% divorced or separated, 25.6% married, 24.5% single, and 23.9% widowed. This diversity in marital status could influence psychosocial well-being and health-seeking behaviors, as social support and family responsibilities often affect healthcare decisions.

Income levels varied, with 21.9% earning above GH₵1,000, 21.3% earning GH₵200–499, and 19.3% earning less than GH₵200 per month. Additionally, 21.7% preferred not to disclose their income. The relatively high proportion of respondents in lower-income brackets suggests that economic constraints could be a barrier to accessing oral healthcare services. Participants were fairly evenly distributed across locations, with 35.1% living in urban, 34.5% in peri-urban, and 30.4% in rural areas. This balance ensures diverse representation from different living environments within the municipality, where access to dental facilities may vary. Regarding health insurance, 50.8% of respondents did not have an active National Health Insurance Scheme (NHIS) subscription, while 49.2% were enrolled. This nearly equal distribution indicates moderate health insurance coverage, which could influence access to dental and other healthcare services.

Table 4.1: Socio-Demographic Characteristics of Respondents (n = 461)

Variable	Category	Frequency (n= 461)	Percentage (%)
Gender	Male	199	43.17
	Female	262	56.83
Age (years)	18–29	92	19.96
	30–39	67	14.53
	40–49	90	19.52
	50+	212	45.99
Education	No formal	122	26.46

	Basic	121	26.25
	Secondary	125	27.11
	Tertiary	93	20.17
Occupation	Student	94	20.39
	Civil servant	90	19.52
	Self-employed	94	20.39
	Unemployed	87	18.87
	Others	96	20.82
Marital Status	Single	113	24.51
	Married	118	25.60
	Widowed	110	23.86
	Divorced/Separated	120	26.03
Monthly Income (GHc)	<200	89	19.31
	200-499	98	21.26
	500-999	73	15.84
	>1,000	101	21.91
	Prefer not to say	100	21.69
Residential Status	Rural	140	30.37
	Urban	162	35.14
	Peri-Urban	159	34.49
Active NHIS	No	234	50.76
	Yes	227	49.24
Mean Age (Avg, SD) = (46.61 ± 16.46) years			

Source: *Field Survey (2025)*

4.4 Prevalence of Poor Oral Health

Out of the total study sample size of 461 respondents, 209, representing 45.34% reported not having been diagnosed with any oral health condition in a health facility in the last 12 months. In the contrary, the majority, representing 54.66% of the total respondents, indicated that they have

been diagnosed with various oral health conditions is an accredited health facility within the last 12 months as shown in Fig**.** 4.2 below.

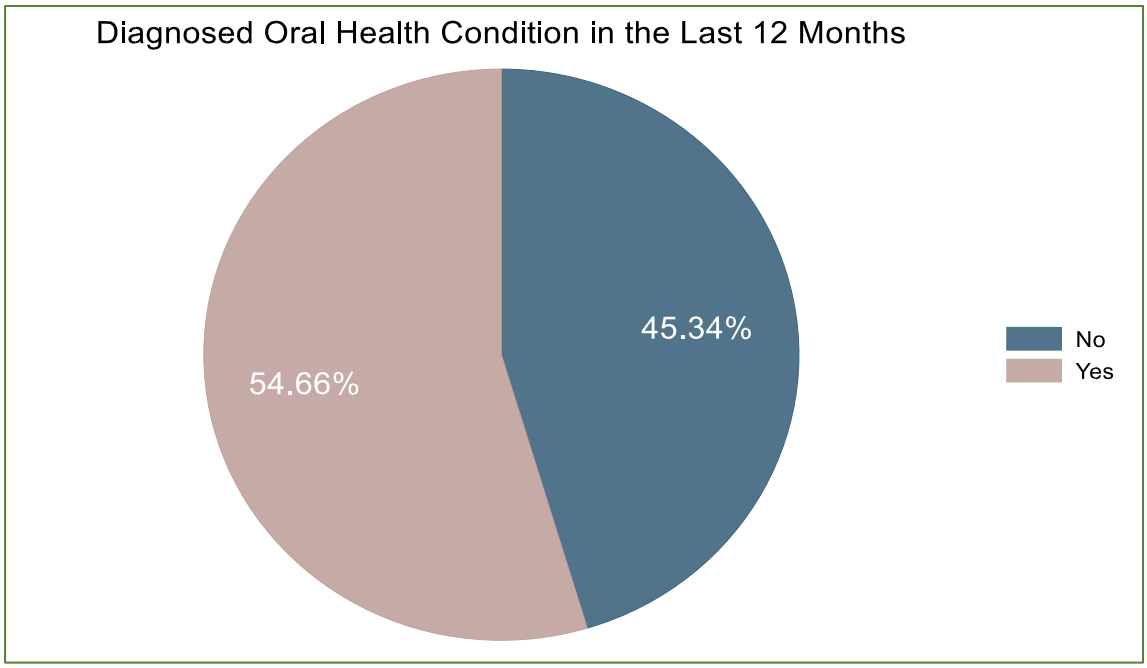

Figure 4.2: ***State of diagnosed oral health conditions***

The results presented in Table 4.3 below showed the prevalence of oral health problems among the respondents. Nearly half of the respondents (45.3%) reported not experiencing any oral health problem in the past year, while the remaining 54.7% indicated having suffered from at least one oral condition. Among those who reported oral problems, mouth odor (halitosis) was the most common, affecting 15.8% of respondents, followed by gum disease (gingivitis) at 13.5%, oral ulcers at 13.0%, and tooth loss or decay at 12.4%. The relatively high proportion of individuals reporting oral health issues suggests that oral diseases are common within the municipality and remain a significant public health concern. The predominance of conditions such as halitosis and gum disease indicates the possible influence of poor oral hygiene practices, infrequent dental visits, and limited awareness of preventive dental care. Additionally, the occurrence of oral ulcers and

tooth decay may reflect underlying factors such as poor dietary habits, tobacco use, and inadequate access to dental services (See Figure 4.3).

Table 4.2: Prevalence of Oral Health Problems (n = 461)

Oral Health Issue	Frequency	Percentage (%)
None reported	209	45.34
Mouth odor (halitosis)	73	15.84
Gum disease (gingivitis)	62	13.45
Oral Ulcer	60	13.02
Tooth Loss/Decay	57	12.36
Total	**461**	**100**

Source: *Field Survey (2025)*

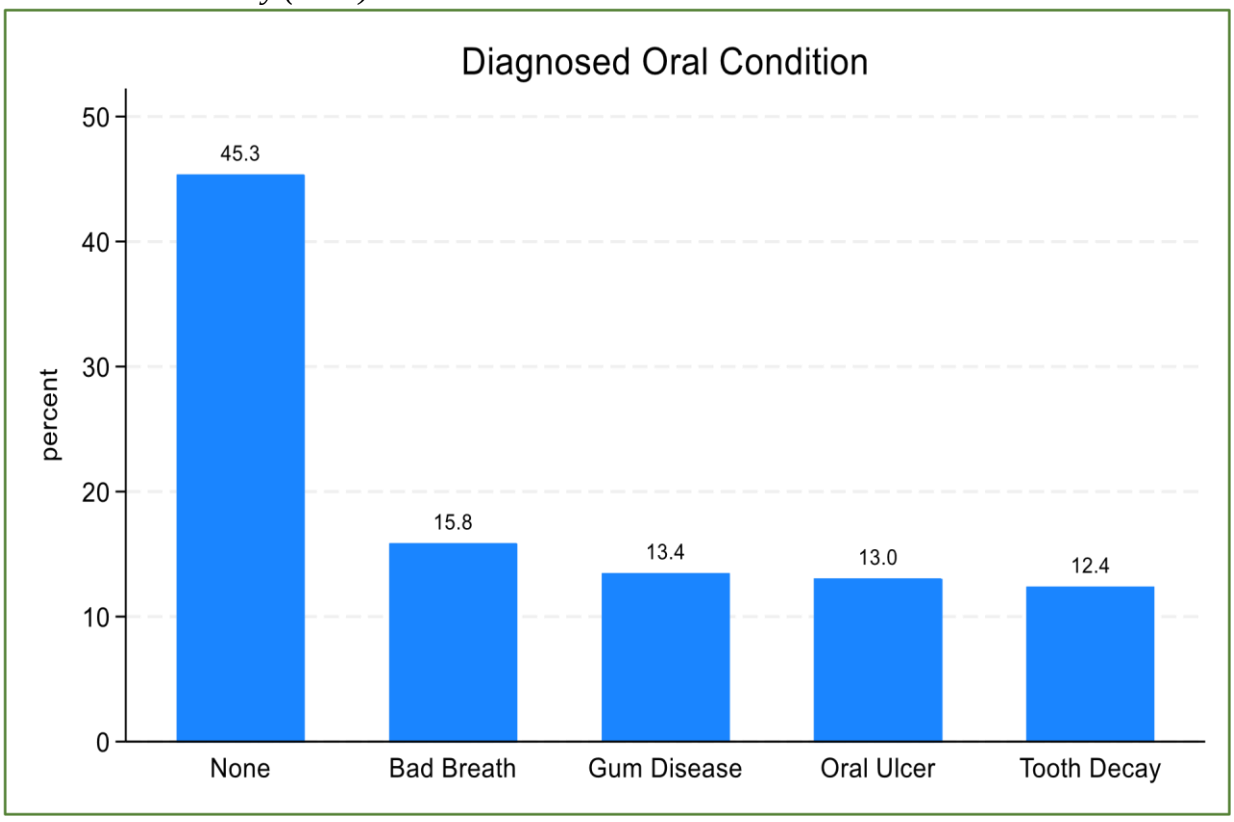

Figure 4.3: Distribution of diagnosed oral health conditions

4.4: Oral Hygiene Practices

The results presented in Table 4.3 below revealed varying oral hygiene and lifestyle practices among the respondents that significantly influence their oral health status. Nearly one-quarter (23.6%) of the participants had not visited a dentist in the past year, while 22.9% reported visiting once, 24.9% visited two to three times, and 28.4% visited more than four times. Although a fair proportion of respondents had made dental visits, the fact that close to one in four had never seen a dentist suggests that preventive oral healthcare is still not a common practice among residents of the Ho Municipality. With respect to brushing frequency, 27.3% of the respondents brushed more than twice daily, 26.5% brushed twice daily, 23.4% brushed once daily, and a worrying 22.8% never brushed their teeth, indicating poor oral hygiene among a considerable proportion of the population. Regarding the type of cleaning tool used, 27.1% of respondents used chewing sticks, 26.9% used toothbrush and toothpaste, 22.6% used both, while 23.4% used other materials. This shows that traditional oral cleaning methods such as chewing sticks, remain common, possibly due to cultural preferences or limited access to modern dental care products.

The use of fluoride toothpaste, which is essential for preventing dental caries, was relatively low 34.5% did not use it, 33.4% did, and 32.1% were unsure whether their toothpaste contained fluoride indicating limited awareness about its importance in oral health maintenance. In terms of dietary habits, the consumption of sugary foods was generally high, with only 21.0% rarely or never consuming such foods, while the majority consumed them occasionally (26.9%), daily (25.8%), or several times a week (26.3%), a pattern that increases the risk of tooth decay. Alcohol consumption was almost evenly split, with 49.5% reporting use and 50.5% abstaining, while tobacco use was

slightly higher at 51.4% compared to 48.6% who did not use tobacco. The high prevalence of alcohol and tobacco use poses additional oral health risks, including gum disease and oral cancer.

Table 4.3: Practices that Impact Oral Health (n = 461)

Variable	Categories	Frequency	Percentage
Visit to a Dentist in the past year	None	109	23.64
	Once	106	22.99
	2-3 times	115	24.95
	> 4 times	131	28.42
Brush frequency	Never	105	22.78
	Once daily	108	23.43
	Twice daily	122	26.46
	More than twice	126	27.33
Cleaning	Chewing stick	125	27.11
tool	Toothbrush & toothpaste	124	26.90
	Both	104	22.56
	Other	108	23.43
Fluoride toothpaste	No	159	34.49
	Yes	154	33.41
	Don’t know	148	32.10
Sugary Food Intake	Rarely/Never	97	21.04
	Occasionally	124	26.90
	Daily	119	25.81
	Several times/week	121	26.25
Alcohol Use	No	233	50.54

	Yes	228	49.46
Tobacco Use	No	224	48.59
	Yes	237	51.41

Source: *Field Survey (2025)*

4.4 Perceived Oral Health Status

The study participants were asked to self-evaluate their current health status. It was observed from the data, that majority (22.6%) perceived their current oral health to be "*fair*". Followed by a section that graded themselves to have "*very poor*" oral health (22.1%). Just a handful of the study participants actually perceived their oral health condition to be "*Excellent".*

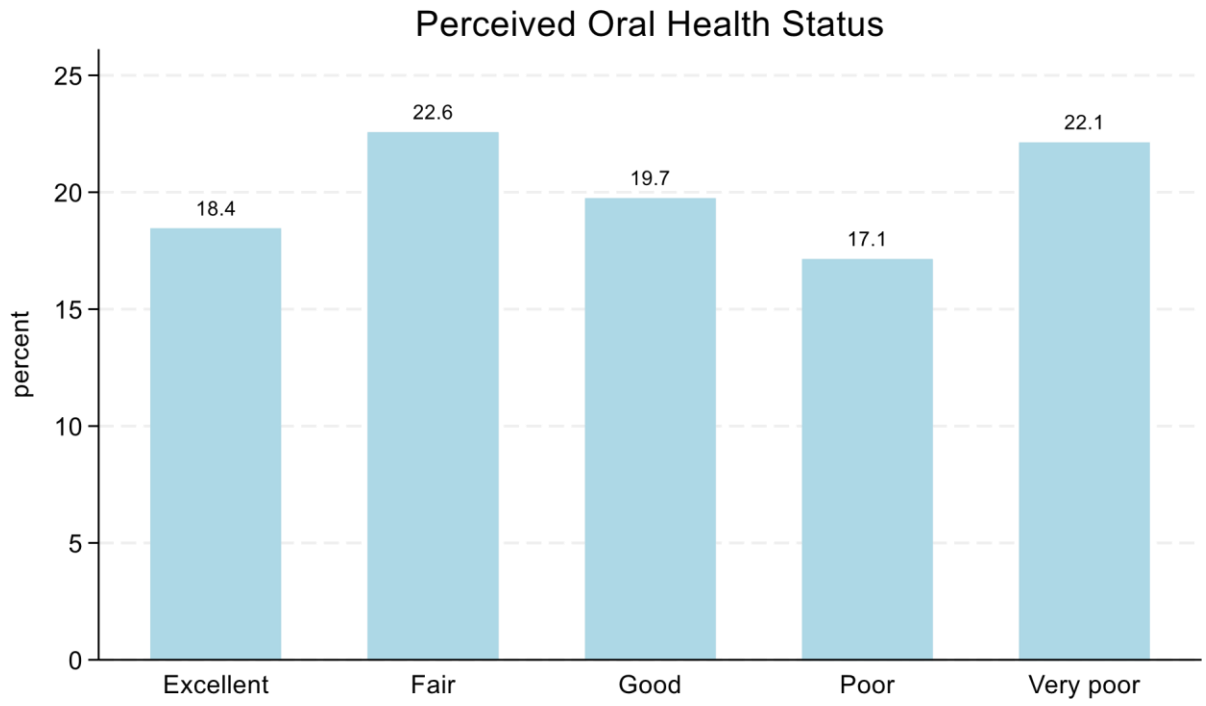

Figure 4.1: Respondents' self-assessment of their oral health condition

4.5 Effect of Poor Oral Health on Overall Health and Well-being

Respondents were asked to indicate whether poor oral health had negatively affected their general health and daily functioning. The majority (71.8%) of respondents reported that oral health problems caused frequent pain or discomfort, while 60.3% indicated difficulties with eating and nutrition. More than half (54.9%) admitted that oral health challenges affected their selfconfidence, highlighting both physical and psychosocial consequences (See Table 4.4).

Table 4.4: Assessment of Oral Health on General Health (n = 461)

Statement	Agree (%)	Disagree (%)
Oral health problems caused frequent pain/discomfort	331 (71.8)	130 (28.2)
Oral health issues affected eating and nutrition	278 (60.3)	183 (39.7)
Poor oral health impacted self-confidence/social life	253 (54.9)	208 (45.1)
Oral health issues interfered with work productivity	217 (47.1)	244 (52.9)
Poor oral health caused stress/anxiety	194 (42.1)	267 (57.9)

Source: *Field Survey (2025)*

4.6 Classification of Well-being status of the study participant

The study participants were asked five (5) sets of questions spanning issues like the effect of oral health on the pattern of eating, missing work/school, self-esteem and confidence level, discomfort during social interactions, and productivity level. The responses were graded on a Likert Scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. An aggregated score for each respondent's reply to the questions was then used to generate two categories of well-being. Those who scored less than the mean score value of 15.07 were classified as *"Poor"* and those above were classified as having *"Good"* well-being.

It was observed from the data that the majority (56%) of the study participants were identified as having poor well-being, using their oral health conditions as the indicator.

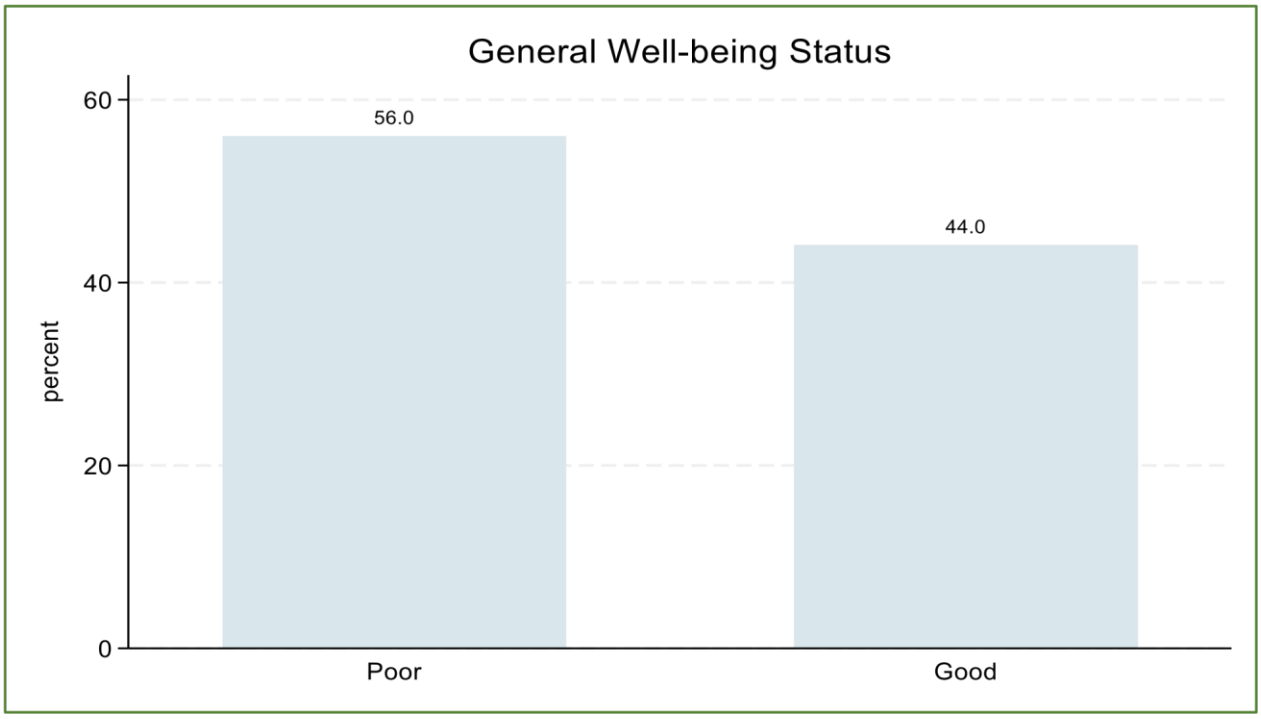

Figure 4.4: ***Bar Chart showing the well-being status of participants***.

4.7 Bivariate Analysis of Socio-Demographic Variables and Overall Well-being

These results delved into the association between perceived well-being and various sociodemographic characteristics among the studied population, utilizing the data presented in Table 4.5 below. In the table, there was no statistically significant association between well-being and any of the demographic variables examined ($p > 0.05$). Although slight variations were observed across categories, these differences were not significant. In terms of gender, almost equal proportions of males (55.8%) and females (56.1%) reported poor well-being, suggesting that both sexes experienced similar challenges related to oral health and overall well-being. Age-wise, respondents aged 30–39 years had the highest proportion of poor well-being (58.2%), followed by

those aged 40–49 years (55.6%) and those aged 50 years and above (54.7%). However, the relationship between age and well-being was not statistically significant (p = 0.945), indicating that perceived well-being did not differ markedly across age groups.

With regard to education, respondents with secondary education reported the highest proportion of poor well-being (58.4%), followed by those with basic education (55.4%) and tertiary education (55.9%). Those with no formal education recorded slightly lower levels of poor well-being (54.1%), suggesting that educational attainment had little influence on perceived well-being (p = 0.921). In terms of occupation, unemployed respondents reported the highest prevalence of poor well-being (62.1%), while students recorded the lowest (47.9%). Although this pattern indicates that employment status may influence well-being potentially through its effects on income and access to healthcare the association was not statistically significant (p = 0.133).

Marital status also showed minimal variation in well-being outcomes. Divorced or separated respondents had a nearly balanced distribution between poor (50.8%) and good (49.2%) wellbeing, while single (59.3%), married (58.5%), and widowed (55.5%) individuals recorded higher proportions of poor well-being. This suggests that marital status may influence psychosocial support and stress levels, though the difference was not statistically significant (p = 0.551). Similarly, income did not show a significant relationship with well-being (p = 0.880), as poor wellbeing was observed across all income categories, ranging from 53.9% among those earning below GH₵200 to 59.4% among those earning above GH₵1,000.

Regarding residential status, respondents living in rural areas reported a lower prevalence of poor well-being (48.6%) compared to those in peri-urban (57.2%) and urban (61.1%) areas, although this difference did not reach statistical significance (p = 0.084). This pattern may suggest that

individuals in rural areas experience fewer stressors related to modern lifestyles or may perceive their health differently from those in urban settings. Finally, National Health Insurance Scheme (NHIS) membership did not significantly influence well-being (p = 0.448), as similar proportions of respondents without active NHIS (57.7%) and those with active NHIS (54.2%) reported poor well-being.

Table 4.5: Bivariate Analysis of Well-Being on Selected Socio-Demographic Characteristics Variable

Variables	Category	Well-Being		P-value
		Poor	Good	
Gender	Male	111 (55.78)	88 (44.22)	0.944
	Female	147 (56.11)	115 (43.89)	
Age (years)	18–29	53 (57.61)	39 (42.39)	0.945
	30–39	39 (58.21)	28 (41.79)	
	40–49	50 (55.56)	40 (44.44)	
	50+	116 (54.72)	96 (45.28)	
Education	No formal	66 (54.10)	56 (45.90)	0.921
	Basic	67 (55.37)	54 (44.63)	
	Secondary	73 (58.40)	52 (41.60)	
	Tertiary	52 (55.91)	41 (44.09)	
Occupation	Student	45 (47.87)	49 (52.13)	0.133
	Civil servant	46 (51.11)	44 (48.89)	
	Unemployed	54 (62.07)	33 (37.93)	
	Others	53 (55.21)	43 (44.79)	
Marital Status	Single	67 (59.29)	46 (40.71)	0.551
	Married	69 (58.47)	49 (44.55)	
	Widowed	61 (55.45)	49 (44.55)	
	Divorced/Separated	61 (50.83)	59 (49.17)	
Monthly Income (GHc)	<200	48 (53.93)	41 (46.07)	0.880
	200-499	53 (54.08)	45 (45.92)	
	500-999	43 (58.90)	30 (41.10)	

	>1,000	60 (59.41)	41 (40.59)	
	Prefer not to say	54 (54.00)	46 (46.00)	
Residential Status	Rural	68 (48.57)	72 (51.43)	0.084
	Urban	99 (61.11)	63 (38.89)	
	Peri-Urban	91 (57.23)	68 (42.77)	
Active NHIS	No	135 (57.69)	99 (42.31)	0.448
	Yes	123 (54.19)	104 (45.81)	

Source: *Field Survey (2025)*

4.8 Bivariate Analysis of Behavioural Practices on Overall Well-being

The results presented in Table 4.6 below examine the statistical association between various oral heal related- behavioral practices and the overall well-being of respondents in the Ho Municipality. Overall, the analysis revealed no statistically significant association between behavioral practices and well-being ($p > 0.05$), suggesting that although some variations existed across categories, these differences were not strong enough to indicate meaningful statistical associations.

Respondents who had not visited a dentist in the past year recorded the highest proportion of poor well-being (63.3%), compared to those who visited once (52.8%), two to three times (53.9%), or more than four times (54.2%). Although individuals who made more frequent dental visits generally reported slightly better well-being, the difference was not statistically significant ($p = 0.367$). This indicates that regular dental visits may contribute to improved oral and general wellbeing, but many respondents might still underutilize dental care due to cost, limited access, or lack of awareness.

With regard to brushing frequency, the proportion of respondents with poor well-being was relatively similar across all categories ranging from 54.3% among those who brushed once daily to 58.7% among those who brushed more than twice daily. This lack of significant variation ($p = 0.898$) suggests that brushing frequency alone may not directly influence perceived well-being;

rather, factors such as brushing technique, duration, and toothpaste quality could play more substantial roles.

In terms of cleaning tools, those who relied solely on chewing sticks reported the highest rate of poor well-being (62.4%), compared to those using toothbrush and toothpaste (53.2%) or both (52.9%). Although this pattern implies that modern cleaning tools might be associated with better oral health and well-being, the association was not statistically significant (p = 0.398). Similarly, respondents' use of fluoride toothpaste showed minimal variation in well-being outcomes (p = 0.968), with nearly equal proportions of poor well-being among users (55.2%) and non-users (56.6%). This may indicate limited awareness of fluoride's preventive benefits or inconsistent use.

Regarding dietary habits, respondents who rarely or never consumed sugary foods surprisingly recorded the highest proportion of poor well-being (60.8%), while those consuming sugary foods daily or occasionally reported slightly lower rates of poor well-being. However, the difference was not significant (p = 0.654), possibly due to the influence of other lifestyle or health factors.

In terms of alcohol consumption, both users (55.3%) and non-users (56.7%) had comparable levels of poor well-being (p = 0.759), indicating that alcohol use did not significantly affect overall wellbeing in this sample. Similarly, tobacco use was not significantly associated with well-being (p = 0.115), although tobacco users had a higher proportion of poor well-being (59.7%) compared to non-users (52.4%). This finding aligns with global evidence that tobacco negatively affects oral and general health but may not always be perceived immediately in terms of well-being.

Table 4.6: Bivariate Analysis of Oral Health-Related Behavioural Practices on Overall Wellbeing

Variable	Categories	Well-Being		P-Value
		Poor	Good	
Visit to a	None	69 (63.300	40 (36.70)	0.367

Dentist in the past year	Once	56 (52.83)	50 (47.17)	
	2-3 times	62 (53.91)	53 (46.09)	
	> 4 times	71 (54.20)	60 (45.80)	
Brush frequency	Never	59 (54.63)	49 (45.37)	0.898
	Once daily	57 (54.29)	48 (45.71)	
	Twice daily	68 (55.74)	54 (44.26)	
	More than twice	74 (58.73)	52 (41.27)	
Cleaning tool	Chewing stick	78 (62.40)	47 (37.60)	0.398
	Toothbrush & toothpaste	66 (53.23)	58 (46.77)	
	Both	55 (52.88)	49 (47.12)	
	Other	59 (54.63)	49 (45.37	
Fluoride toothpaste	No	90 (56.60)	69 (43.40)	0.968
	Yes	85 (55.19)	69 (44.81)	
	Don't know	83 (56.08)	65 (43.92)	
Sugary Food Intake	Rarely/Never	59 (60.82)	38 (39.18)	0.654
	Occasionally	66 (53.23)	58 (46.77)	
	Daily	68 (57.14)	51 (42.86)	
	Several times/week	65 (53.72)	56 (46.28)	
Alcohol Use	No	127 (56.70)	97 (43.30)	0.759
	Yes	131 (55.27)	106 (44.73)	
Tobacco Use	No	122 (52.36)	111 (47.64)	0.115
	Yes	136 (59.65)	92 40.35)	

Source: *Field Survey (2025)*

4.8 Multivariate Logistic Regression of the Effect of Socio-Demographic Characteristics on Oral well-being

The table 4.7 below presents the bivariate (unadjusted) and multivariate (adjusted) logistic regression analyses of the effects of socio-demographic characteristics on respondents' well-being. The Crude Odds Ratio (COR) shows the unadjusted relationship between each variable and

wellbeing, while the Adjusted Odds Ratio (AOR) controls for potential confounding effects of other variables in the model. Statistical significance was set at $p < 0.05$.

The findings show no statistically significant difference between males and females in relation to well-being. Males were only slightly more likely to report better well-being than females, both before (COR = 1.01; 95% CI: 0.70–1.47; $p = 0.944$) and after adjustment (AOR = 1.06; 95% CI: 0.72–1.56; $p = 0.764$). These results suggest that gender does not significantly influence well-being among respondents.

Age did not significantly affect well-being across all categories. Compared with respondents aged 18–29 years, those aged 30–39 (AOR = 0.87; 95% CI: 0.45–1.69; $p = 0.690$), 40–49 (AOR = 1.10; 95% CI: 0.60–2.04; $p = 0.753$), and 50 years and above (AOR = 1.12; 95% CI: 0.66–1.89; $p = 0.668$) showed no statistically significant differences. This indicates that well-being levels were fairly consistent across age groups.

Similarly, educational attainment was not significantly associated with well-being. Compared with respondents with no formal education, those with basic (AOR = 0.94; 95% CI: 0.56–1.58; $p = 0.822$), secondary (AOR = 0.85; 95% CI: 0.51–1.43; $p = 0.547$), and tertiary education (AOR = 0.94; 95% CI: 0.54–1.64; $p = 0.821$) did not exhibit any significant variation in well-being. This suggests that education level alone does not predict well-being in the sample.

Occupation showed a mixed pattern. Compared with students (the reference category), selfemployed respondents were significantly less likely to have higher well-being (AOR = 0.53; 95% CI: 0.29–0.96; $p = 0.037$). This relationship remained significant after adjustment, indicating that self-employment may be associated with poorer well-being—possibly due to income

instability or job stress. The unemployed also showed a marginally lower likelihood of good well-being, though not statistically significant (AOR = 0.56; 95% CI: 0.31–1.04; $p = 0.065$).

Marital status was not significantly related to well-being. Compared with single respondents, being married (AOR = 1.09; $p = 0.783$), widowed (AOR = 1.09; $p = 0.769$), or divorced/separated (AOR = 1.40; $p = 0.217$) did not significantly affect well-being. Thus, marital differences did not appear to influence subjective well-being in this study.

Income levels showed no statistically significant association with well-being. Compared to respondents earning less than GH¢200 per month, those earning GH¢200–499 (AOR = 0.91; $p = 0.765$), GH¢500–999 (AOR = 0.76; $p = 0.408$), or more than GH¢1,000 (AOR = 0.78; $p = 0.417$) had similar well-being outcomes. This may suggest that other non-economic factors contribute more strongly to well-being in this population.

Residential status emerged as a significant determinant of well-being. Respondents residing in urban areas were less likely to report good well-being compared to those in rural areas (AOR = 0.62; 95% CI: 0.38–0.98; $p = 0.042$). This indicates that urban dwellers experience relatively lower well-being, possibly due to stress, cost of living, or reduced social cohesion. Those in peri-urban areas had lower odds as well, but this was not statistically significant (AOR = 0.71; $p = 0.164$).

Having an active NHIS membership was not significantly associated with well-being (AOR = 1.15; 95% CI: 0.79–1.69; $p = 0.462$). This implies that while health insurance may provide some financial protection, it does not necessarily translate into higher subjective well-being.

Table 4.7: Effects of Socio-Demographic Characteristics on Well-being

Variable	Category	Unadjusted		Adjusted	
		COR (95% C.I)	P-value	AOR (95% C.I)	P-value

Gender	Female (**Ref)**	1	-	1	-
	Male	1.01 (0.70-1.47)	0.944	1.06 (0.72-1.56)	0.764
Age (years)	18–29 (**Ref)**	1	-	1	-
	30–39	0.98 (0.52-1.85)	0.940	0.87 (0.45-1.69)	0.690
	40–49	1.09 (0.60-1-95)	0.780	1.10 (0.60-2.04)	0.753
	50+	1.12 (0.69-1.84)	0.641	1.12 (0.66-1.89)	0.668
Education	No formal (**Ref)**	1	-	1	-
	Basic	0.95 (0.57-1.57)	0.842	0.94 (0.56-1.58)	0.822
	Secondary	0.84 (0.51-1.39)	0.496	0.85 (0.51-1.43)	0.547
	Tertiary	0.93 (0.54-1.60)	0.791	0.94 (0.54-1.64)	0.821
Occupation	Student (**Ref)**	1	-	1	-
	Civil servant	0.88 (0.49-1.57)	0.661	0.90 (0.49-1.63)	0.721
	Self-employed	0.52 (0.29-0.93)	**0.028**	0.53 (0.29-0.96)	**0.037**
	Unemployed	0.56 (0.31-1.02)	0.056	0.56 (0.31-1.04)	0.065
	Others	0.75 (0.42-1.32)	0.312	0.73 (0.40-1.31)	0.284
Marital Status	Single (**Ref)**	1	-	1	-
	Married	1.03 (0.61-1.75)	0.900	1.09 (0.63-1.85)	0.783
	Widowed	1.17 (0.69-1.99)	0.562	1.09 (0.63-1.88)	0.769
	Divorced/Sep.	1.41 (0.84-2.37)	0.195	1.40 (0.82-2.37)	0.217
Monthly Income (GHc)	<200 (**Ref)**	1	-	1	-
	200-499	0.99 (0.56-1.77)	0.984	0.91 (0.50-1.67)	0.765
	500-999	0.82 (0.44-1.53)	0.526	0.76 (0.40-1.45)	0.408
	>1,000	0.80 (0.45-1.42)	0.447	0.78 (0.43-1.42)	0.417
	Prefer not to say	0.10 (0.56-1.77)	0.993	0.98 (0.54-1.78)	0.948
	Rural (**Ref)**	1	-	1	-

Residential Status	Urban	0.60 (0.38-0.95)	**0.029**	0.62 (0.38-0.98)	**0.042**
	Peri-Urban	0.71 (0.45-1.11)	0.135	0.71 (0.44-1.15)	0.164
Active NHIS	No (**Ref)**	1	-	1	-
	Yes	1.15 (0.80-1.67)	0.448	1.15 (0.79-1.69)	0.462

Source: *Field Survey (2025)*

4.9 Multivariate Logistic Regression of Behavioural Practices factors influencing Oral wellbeing

The results presented in Table 4.8 show the unadjusted and adjusted logistic regression analyses assessing the effects of various behavioural practices on the overall well-being of respondents. The unadjusted (Crude Odds Ratio – COR) model examines the direct association between each behavioural factor and well-being, while the adjusted (Adjusted Odds Ratio – AOR) model controls for potential confounding variables such as age, gender, education, and income.

Overall, none of the behavioural practices examined showed a statistically significant relationship with overall well-being ($p > 0.05$), indicating that these behaviours did not independently predict better or poorer well-being after controlling for other variables. With respect to dental visits, respondents who had visited a dentist once (AOR = 1.64; 95% CI: 0.94–2.86; p = 0.084), two to three times (AOR = 1.63; 95% CI: 0.94–2.83; p = 0.079), or more than four times (AOR = 1.59; 95% CI: 0.93–2.72; p = 0.089) in the past year were more likely to report good well-being compared to those who had never visited a dentist, although the associations were not statistically significant. This pattern suggests a positive trend where regular dental visits may contribute to improved well-being, possibly due to better oral health maintenance and reduced discomfort, but the evidence was insufficient to establish a definitive link.

Regarding toothbrushing frequency, those who brushed once daily (AOR = 0.98; 95% CI: 0.57–1.68; p = 0.928), twice daily (AOR = 0.82; 95% CI: 0.48–1.40; p = 0.474), or more than twice

daily (AOR = 0.95; 95% CI: 0.54–1.65; p = 0.843) were not significantly different in well-being from respondents who never brushed. Although brushing more frequently is expected to enhance oral health, the lack of significant association suggests that other factors, such as brushing technique, quality of oral hygiene products, or overall lifestyle, may play more influential roles in determining well-being.

In terms of the type of cleaning tool used, those who used toothbrush and toothpaste (AOR = 1.41; 95% CI: 0.84–2.38; p = 0.198), both toothbrush and chewing stick (AOR = 1.57; 95% CI: 0.90–2.73; p = 0.109), or other tools (AOR = 1.45; 95% CI: 0.85–2.49; p = 0.176) were more likely to have good well-being compared to exclusive chewing stick users, though none of these relationships reached statistical significance. The trend, however, suggests that using modern oral hygiene tools may have a positive influence on perceived well-being.

For fluoride toothpaste use, neither users (AOR = 1.00; 95% CI: 0.63–1.58; p = 1.000) nor those unsure of its fluoride content (AOR = 0.97; 95% CI: 0.61–1.54; p = 0.884) showed any significant difference from non-users, indicating no measurable effect of fluoride use on overall well-being in this sample. This may reflect limited awareness about fluoride benefits or inconsistent use of fluoride-containing products. Concerning sugary food intake, compared to respondents who rarely or never consumed sugary foods, those who consumed them occasionally (AOR = 1.35; 95% CI: 0.78–2.35; p = 0.283), daily (AOR = 1.17; 95% CI: 0.67–2.05; p = 0.589), or several times per week (AOR = 1.28; 95% CI: 0.74–2.32; p = 0.380) did not show significant differences in wellbeing. Although high sugar intake is a known risk factor for oral diseases, this finding suggests that perceived well-being may not directly reflect underlying oral health conditions unless they become symptomatic.

With respect to alcohol use, those who consumed alcohol (AOR = 1.08; 95% CI: 0.74–1.57; p = 0.686) were slightly more likely to report good well-being than non-drinkers, but this relationship was not significant. Similarly, tobacco users (AOR = 0.73; 95% CI: 0.50–1.06; p = 0.100) were less likely to report good well-being than non-users, suggesting a possible negative impact of tobacco use on well-being, though the association did not reach statistical significance.

Table 4.8: Effects of Behavioural Practices on Overall Well-being

Variable	Categories	Unadjusted		Adjusted	
		COR (95% C.I)	P-value	AOR (95% C.I)	P-value
Visit to a Dentist in the past year	None (**Ref)**	1	-	1	-
	Once	1.54 (0.89-2.66)	0.120	1.64 (0.94-2.86)	0.084
	2-3 times	1.47 (0.86-2.52)	0.155	1.63 (0.94-2.83)	0.079
	> 4 times	1.46 (0.87-2.45)	0.155	1.59 (0.93-2.72)	0.089
Brush frequency	Never (**Ref)**	1	-	1	-
	Once daily	0.94 (0.56-1.59)	0.826	0.98 (0.57-1.68)	0.928
	Twice daily	0.83 (0.49-1.41)	0.497	0.82 (0.48-1.40)	0.474
	More than twice	0.99 (0.58-1.69)	0.960	0.95 (0.54-1.65)	0.843
Cleaning tool	Chewing stick (**Ref)**	1	-	1	-
	Toothbrush & toothpaste	1.46 (0.88-2.42)	0.143	1.41 (0.84-2.38)	0.198

	Both	1.48 (0.87-2.51)	0.147	1.57 (0.90-2.73)	0.109
	Other	1.38 (0.82-2.33)	0.230	1.45 (0.85-2.49)	0.176
Fluoride toothpaste	No (**Ref)**	1	-	1	-
	Yes	1.06 (0.68-1.65)	0.802	1.00 (0.63-1.58)	1.000
	Don't know	1.02 (0.65-1.60)	0.926	0.97 (0.61-1.54)	0.884
Sugary Food Intake	Rarely/Never (**Ref)**	1	-	1	-
	Occasionally	1.36 (0.80-2.33)	0.259	1.35 (0.78-2.35)	0.283
	Daily	1.16 (0.67-2.01)	0.585	1.17 (0.67-2.05)	0.589
	Several times/week	1.34 (0.78-2.30)	0,293	1.28 (0.74-2.32)	0.380
Alcohol Use	No (**Ref)**	1	-	1	-
	Yes	1.06 (0.73-1.53)	0.759	1.08 (0.74-1.57)	0.686
Tobacco Use	No (**Ref)**	1	-	1	-
	Yes	0.74 (0.51-1.08)	0.115	0.73 (0.50-1.06)	0.100

Source: *Field Survey (2025)*

CHAPTER FIVE:

5.0 DISCUSSION

5.1 Introduction

This chapter discusses the findings of the study on poor oral health and health-seeking behavior among residents of Ho Municipality in relation to existing literature. The discussion is organized according to the study objectives. The results are interpreted in light of both local and global studies, highlighting points of convergence, divergence, and new insights.

5.2 Prevalence of Oral Health Problems

The findings of this study show that a considerable proportion of respondents reported experiencing at least one oral health problem. These prevalence levels are indicative of a high burden of self-perceived oral morbidity in the Ho Municipality. The results align with a growing body of evidence showing that adults in Ghana and other low- and middle-income countries often live with untreated oral conditions (e.g. dental caries, periodontal disease) due to barriers in access, awareness, and preventive care.

For instance, a community-based study in the Fanteakwa districts of Ghana reported an overall self-reported oral health problem prevalence of 58.5%, with toothache, swollen gums, bleeding gums, and mobile teeth among the most common complaints (Kwabena-Adade *et al..,* 2025). This similarity in magnitude reinforces the view that the burden of oral problems in adult populations in Ghana is substantial and consistent across settings.

From a national perspective, Ghana's oral health profile supports such findings: untreated caries in permanent teeth among people aged 5 years and older is estimated at approximately 25.3%, and severe periodontal disease among persons aged 15+ years is around 29.3% (WHO, 2022).

These national estimates point to a high burden of chronic oral disease in the population, even though many cases may remain asymptomatic or only mildly symptomatic until later stages.

Several explanations may help interpret the patterns observed in this study. First, low utilization of dental services and limited preventive care likely contribute to the accumulation of untreated oral problems. In Ghana and other parts of sub-Saharan Africa, many people only seek dental care when symptoms become severe or painful, resulting in a high load of untreated disease

Second, behavioral and lifestyle factors such as suboptimal oral hygiene, infrequent brushing, use of traditional cleaning methods (e.g. chewing sticks without fluoride), and high consumption of sugary foods contribute to the initiation and progression of oral diseases. While our study data on practices suggest these risk behaviors are common, their direct statistical associations with wellbeing were not strong but their influence on disease prevalence is plausibly significant as supported in the literature.

Third, social determinants including low awareness, economic constraints, limited access to dental care, and health system weaknesses play a central role in sustaining the high prevalence of oral health problems. For example, in many Ghanaian communities, dental services are costly, unevenly distributed, and often excluded from basic health coverage, limiting preventive access (WHO, 2022). Moreover, rural communities may especially suffer due to poor infrastructure, fewer dental professionals, and restricted access.

It is worth noting, however, that measurement limitations exist. Our data rely on self-reported oral health conditions rather than clinical examination, which may result in under- or over-reporting depending on respondents' perception, recall, or willingness to report symptoms. Some respondents may have mild or early disease (e.g. incipient caries, subclinical gingival inflammation) that they do not recognize, while others might over-report minor conditions (e.g. transient ulcers). Clinical diagnostic studies (e.g. using DMFT index or periodontal indices) often reveal higher prevalence levels, especially for subclinical disease, compared to self-report measures.

Despite these limitations, the high prevalence observed underscores the public health importance of oral diseases in the municipality. The results highlight the urgent need for strengthened community-based oral health promotion, improved access to preventive and curative dental

services, and integration of oral health into primary healthcare. Specifically, emphasis should be placed on early detection, regular screening, and education about oral hygiene behaviors (such as appropriate brushing, use of fluoride toothpaste, limiting sugar intake). Targeted interventions may be especially needed for high-risk groups (older adults, rural dwellers, lower-income populations) who may bear disproportionate disease burden.

5.3 Factors Associated with Poor Oral Health and Well-being

The second objective of this study sought to assess the factors associated with poor oral health and overall well-being among residents of the Ho Municipality. The findings revealed that although some variations existed across demographic and behavioural variables, none of the associations reached statistical significance. Nonetheless, observable trends indicated that factors such as older age, unemployment, low income, irregular dental visits, infrequent brushing, and tobacco use were more prevalent among respondents who reported poor well-being. These trends are consistent with broader evidence from Ghana and other low- and middle-income countries (LMICs), which identifies socio-demographic and behavioural determinants as key predictors of oral health disparities and quality of life.

5.3.1 Socio-Demographic Factors and Well-being

Age, gender, education, and income are well-documented correlates of oral health and overall wellbeing. In the present study, respondents aged 30–39 years and those above 50 years showed higher proportions of poor well-being, aligning with findings by Petersen and Ogawa (2021), who observed that advancing age increases the likelihood of chronic oral conditions such as periodontitis, tooth loss, and oral pain, which negatively impact eating, speech, and social interaction. Similarly, Marcenes *et al.*. (2020) noted that older adults often experience cumulative

oral disease burden due to long-term exposure to risk factors like tobacco use, poor diet, and inadequate access to dental care.

Although gender did not show a significant association with well-being, females were slightly more represented among those reporting poor oral health. This pattern echoes findings by Amoateng *et al.*. (2022) in Ghana, who found that women often report poorer oral health-related quality of life, partly due to higher health awareness and symptom reporting, even when objective disease levels are similar to men.

Educational level and income also play pivotal roles in shaping oral health outcomes. Respondents with lower educational attainment and income tended to report poorer well-being, a relationship that has been widely observed in the literature. According to Peres *et al.*. (2019), low socioeconomic status restricts access to preventive dental services, healthy diets, and quality oral care products, thereby increasing vulnerability to oral disease. Similarly, Wang *et al.*. (2022) demonstrated that income inequality and lack of health insurance coverage are strongly correlated with poor oral health outcomes and diminished self-rated well-being in LMICs. Although education and income did not show statistically significant associations in this study, the observed patterns suggest that socio-economic disadvantage remains an underlying determinant of oral health inequities in the Ho Municipality.

5.3.2 Occupational and Marital Status

The study also revealed that unemployed respondents reported the highest levels of poor wellbeing, followed by informal workers and civil servants, while students reported relatively better outcomes. This is consistent with research by Kassebaum *et al.*. (2020), which found that unemployment and informal economic engagement often lead to financial barriers that restrict access to oral health services. Employment status influences not only income but also psychosocial

stress, which can indirectly impact oral and general health through behaviours such as neglecting oral hygiene or resorting to unhealthy coping mechanisms like smoking (Gao *et al..,* 2021).

Similarly, marital status showed non-significant but noticeable differences, with divorced and separated individuals reporting slightly better well-being than widowed and single respondents. Previous studies suggest that marital relationships may influence emotional and social well-being, which in turn affect health-seeking behaviours and perceived oral health status (Locker & Allen, 2007). However, the lack of statistical significance in this study may reflect diverse coping mechanisms and support networks within different social categories in the municipality.

5.3.3 Behavioural and Lifestyle Factors

Behavioural practices such as oral hygiene, diet, and substance use are critical determinants of oral health and overall well-being. In this study, individuals who brushed less frequently, used chewing sticks alone, or did not use fluoride toothpaste were more likely to report poor well-being. Though not statistically significant, these findings are consistent with prior research linking inadequate oral hygiene practices to poor oral health-related quality of life (Lertpimonchai *et al..,* 2021; Okunseri *et al..,* 2021). The persistence of traditional oral cleaning tools, such as chewing sticks, reflects both cultural practices and limited access to modern dental care products in semi-urban Ghanaian settings (Arheiam *et al..,* 2018).

Lifestyle factors such as tobacco and alcohol use were also examined. Tobacco users exhibited higher levels of poor well-being compared to non-users, a finding consistent with Warnakulasuriya (2020), who identified tobacco as a major risk factor for oral diseases and oral cancers that diminish overall quality of life. Similarly, alcohol use, though not statistically significant, has been linked with increased risk of oral mucosal lesions and systemic complications (GBD Oral Health Collaborators, 2020). Frequent consumption of sugary foods, another common behaviour,

contributes to dental caries and pain, which can interfere with eating and self-esteem, thereby lowering well-being (Moynihan & Kelly, 2014).

The lack of significant associations between these behaviours and well-being in the current study may stem from several contextual factors. First, self-reported measures of well-being may not fully capture the subclinical or long-term impact of poor oral health. Second, health-seeking behaviour in Ghana tends to be symptom-driven, meaning that individuals may not perceive their oral health as poor until pain or visible damage occurs. Lastly, confounding variables such as access to care, health literacy, and psychological resilience may moderate the relationship between behavioural factors and well-being (Petersen, 2022).

5.3.4 Health System and Environmental Context

The findings also underscore the role of healthcare access in shaping oral health and well-being. About half of the respondents lacked active National Health Insurance Scheme (NHIS) coverage, suggesting that financial barriers could limit regular dental visits and preventive care. This aligns with World Health Organization (2022) recommendations emphasizing that integrating oral health services into primary care systems and expanding insurance coverage are essential to reducing inequities in oral health outcomes.

Environmental and residential factors also emerged as relevant, with urban residents showing slightly higher levels of poor well-being compared to rural counterparts. This could be attributed to lifestyle differences, dietary patterns, or stress levels associated with urban living, as noted by Varenne *et al.*. (2021) in their assessment of urban oral health disparities in Africa.

5.4 Oral Health-Seeking Behavior Among Residents of Ho Municipality

This objective sought to determine the oral health-seeking behavior of people living in the Ho Municipality. The study revealed that preventive and routine oral health practices among respondents were generally low, reflecting a pattern of limited health-seeking behavior. Only 28.4% of the participants reported visiting a dentist more than four times in the past year, whereas 23.6% had never visited a dentist. Furthermore, brushing frequency varied widely, with 27.3% brushing more than twice daily, 26.5% brushing twice daily, and a worrying 22.8% never brushing at all. In addition, 27.1% relied solely on chewing sticks, 26.9% used toothbrush and toothpaste, and only about one-third (33.4%) reported using fluoride toothpaste. These findings collectively point to inadequate oral hygiene practices and low utilization of professional dental care in the municipality.

5.4.1 Low Utilization of Dental Services

The low rate of dental visits found in this study is consistent with the general trend of underutilization of oral healthcare services across Ghana and other low- and middle-income countries (LMICs). For example, Amoateng *et al..*, (2022) reported that less than one-third of Ghanaian adults had visited a dentist in the previous 12 months, largely due to cost, lack of perceived need, and distance to dental facilities. Similarly, Okunseri *et al..*, (2021) found that dental attendance in sub-Saharan Africa is mostly symptom-driven people often seek care only when pain becomes unbearable, rather than for preventive check-ups.

In the current study, the high proportion (23.6%) of respondents who had never visited a dentist indicates a prevailing lack of awareness about the importance of regular oral check-ups. This finding corroborates Petersen and Ogawa (2021), who observed that limited oral health literacy and cultural misconceptions remain key barriers to preventive oral healthcare in many African

settings. The reliance on home remedies or traditional self-care measures may further discourage professional consultations, especially among low-income populations.

5.4.2 Oral Hygiene Practices and Preventive Behavior

Brushing frequency and cleaning tools are also critical indicators of oral health-seeking behavior. Although nearly half of the respondents brushed at least twice daily, a significant number either brushed infrequently or not at all. This raises concerns about oral hygiene awareness and access to hygiene products. Studies from other Ghanaian municipalities, including those by Quartey *et al.* (2022) and Addei *et al.* (2020), similarly reported suboptimal brushing practices and limited use of fluoride toothpaste. The persistence of traditional cleaning methods, such as chewing sticks, may be influenced by cultural beliefs, affordability, and perceptions of natural efficacy (Arheiam *et al..*, 2018). While chewing sticks have some antimicrobial benefits, their exclusive use without fluoride-containing toothpaste has been found insufficient for preventing dental caries and periodontal disease (Okeigbemen, 2020).

5.4.3 Fluoride Use and Knowledge Gaps

Only one-third of respondents in this study confirmed using fluoride toothpaste, while another third were unsure whether their toothpaste contained fluoride. This reflects low awareness about the role of fluoride in preventing dental caries and strengthening enamel. Petersen *et al.*. (2022) emphasized that fluoride awareness remains low in most LMICs due to inadequate public education and weak oral health promotion policies. A study in Nigeria by Adebayo *et al.*. (2023) also found that uncertainty about toothpaste content was common among adults, especially those

with lower education levels and rural residency. This knowledge gap underscores the urgent need for community education on effective oral hygiene practices.

5.4.3 Dietary Habits and Lifestyle Factors

The study also showed that consumption of sugary foods was high, with more than half of respondents consuming such foods daily or several times per week. Frequent sugar intake is a wellestablished risk factor for dental caries, and when combined with poor brushing habits, it accelerates tooth decay (Moynihan & Kelly, 2014). Moreover, approximately half of the respondents reported using alcohol (49.5%) or tobacco (51.4%), both of which are major contributors to oral mucosal diseases, gum infections, and oral cancers (Warnakulasuriya, 2020; GBD Oral Health Collaborators, 2020). These lifestyle patterns reflect not only personal choices but also broader social determinants such as stress, poverty, and lack of preventive education—that shape oral health behavior (Peres *et al.*., 2019).

5.4.4 Socioeconomic and Health System Influences

The findings of this study suggest that economic and systemic factors may underpin poor oral health-seeking behavior in Ho Municipality. Nearly half (50.8%) of the respondents did not have an active National Health Insurance Scheme (NHIS) card, and even for those insured, dental services are often only partially covered. According to the World Health Organization (2022), inadequate financial protection and poor service integration remain key obstacles to achieving universal oral health coverage in Africa. Similarly, Varenne *et al.* (2021) reported that urban-rural disparities in service availability, high out-of-pocket costs, and long waiting times deter many from seeking timely dental care.

The current findings also highlight a knowledge–practice gap: despite awareness of oral hygiene importance, many respondents lacked consistent preventive behaviors. This gap has been noted in

similar Ghanaian studies, where oral health awareness did not necessarily translate into improved practices due to economic hardship and weak health system support (Amoateng *et al..*, 2022; Addei *et al..*, 2020).

5.4.5 Public Health Implications

The low rate of dental attendance, infrequent brushing, and limited use of fluoride observed in this study emphasize the need for a more robust oral health promotion strategy in the Ho Municipality. Community-based oral health education, school-based preventive programs, and mobile dental clinics could help improve accessibility and awareness. Furthermore, integrating oral health into existing primary healthcare and non-communicable disease (NCD) programs would ensure a more holistic approach to health promotion. Petersen (2022) and Marcenes *et al.*. (2020) both recommend integrating oral health into broader health systems to improve equity and sustainability in oral healthcare delivery.

CHAPTER SIX:

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

This study examined the effect of poor oral health on the overall health and well-being of people living in the Ho Municipality, Ghana. Specifically, it sought to (1) assess the prevalence of oral health problems, (2) identify factors associated with poor oral health and well-being, and (3) determine the oral health-seeking behavior of residents. Using a quantitative cross-sectional design

with 461 respondents, the study revealed key insights into the oral health profile, behaviors, and determinants influencing well-being in the municipality.

The findings showed that more than half of the respondents (54.7%) had experienced at least one oral health problem, with halitosis, gum disease, oral ulcers, and tooth decay emerging as the most prevalent conditions. This indicates that oral health problems are widespread among adults in the Ho Municipality and represent a significant public health concern. The study further revealed that while socio-demographic factors such as age, education, income, and occupation showed observable variations in well-being, none demonstrated statistically significant associations. Nonetheless, trends suggested that older age, unemployment, and low income were linked to poorer oral health and reduced well-being highlighting the enduring influence of social and economic inequalities on health outcomes.

Similarly, behavioral factors such as irregular dental visits, low brushing frequency, reliance on traditional cleaning methods, and high intake of sugary foods were associated with poor oral health, though these relationships were not statistically significant. The study found that nearly one in four respondents had never visited a dentist, and only about one-third reported using fluoride toothpaste, indicating low preventive oral health-seeking behavior. Additionally, tobacco and alcohol use were common and may contribute to worsening oral and general health conditions. Collectively, these findings underscore the gap between knowledge and practice, as well as the systemic and socioeconomic barriers that limit the adoption of effective oral hygiene and healthcare behaviors.

The overall findings suggest that oral health problems are not only common but also closely intertwined with broader determinants of well-being economic status, health literacy, access to dental care, and lifestyle practices. Poor oral health, if unaddressed, can impair nutrition,

communication, social interaction, and psychological well-being, thereby diminishing quality of life. The lack of significant associations in the statistical analysis does not imply absence of impact; rather, it reflects the complex, multifactorial nature of oral health, which is shaped by structural, behavioral, and cultural influences.

In conclusion, the study highlights that the oral health and well-being of residents in the Ho Municipality remain suboptimal, driven by a combination of preventable risk factors and limited access to preventive care. To address this challenge, oral health should be given greater priority within local and national health promotion strategies. Public health efforts should focus on strengthening oral health education, improving access to affordable dental services, and integrating oral health into primary healthcare delivery. Policies aimed at expanding National Health Insurance coverage for routine dental care, promoting fluoride use, and reducing risk behaviors such as tobacco and excessive sugar consumption are equally essential. Ultimately, improving oral health in the Ho Municipality requires a multi-sectoral and community-based approach that addresses both individual behaviors and structural barriers, ensuring that oral health becomes an integral component of overall health and well-being for all residents.

6.2 Recommendations

Based on the findings of this study on the effect of poor oral health on the overall health and wellbeing of people in Ho Municipality, the following recommendations are proposed for:

1. **Policy, Practice, and Community Interventions:**
    1. The Municipal Health Directorate, in collaboration with schools and community health workers, should intensify oral health education campaigns to promote proper brushing techniques, regular dental check-ups, use of fluoride toothpaste, and reduced sugar intake among residents.

2. Oral health should be incorporated into existing primary healthcare programs to ensure routine screening, early detection, and prompt management of oral conditions at the community level.
3. The government and relevant stakeholders should expand dental facilities and subsidize basic dental services under the National Health Insurance Scheme (NHIS) to make oral healthcare accessible and affordable to all income groups.
4. Public health initiatives should target the reduction of risk factors such as tobacco use, alcohol consumption, and excessive sugary food intake through behavior change communication and supportive community-based intervention.

2. Future Research Work:

1. Any future research work on this topic should adopt a Qualitative study design, which could help unearth in-depth knowledge of factors contributing to the poor oral health conditions among the studied population.

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APPENDIX 1: QUESTIONNAIRE

Title: Effect of Poor Oral Health on Overall Health and Well-Being in Ho Municipality

Target Group: Adult residents (18 years and above) of Ho Municipality
Estimated Time: 15–20 minutes

Introduction / Consent

Good day. My name is _____, and I am conducting a study on *the effect of poor oral health on overall health and well-being among residents of Ho Municipality*.
Your participation is voluntary, and all responses will be kept confidential.

Section 1: Socio-Demographic Information

1. Age (in completed years): _____
2. Gender: ☐ Male ☐ Female ☐ Other
3. Marital status: ☐ Single ☐ Married ☐ Divorced/Separated ☐ Widowed
4. Educational level: ☐ No formal ☐ Basic ☐ Secondary ☐ Tertiary
5. Occupation: ☐ Unemployed ☐ Self-employed ☐ Civil servant ☐ Student ☐ Other (specify) _____
6. Monthly household income (GHS): ☐ <200 ☐ 200–499 ☐ 500–999 ☐ 1,000+ ☐ Prefer not to say
7. Residential area: ☐ Urban ☐ Peri-urban ☐ Rural
8. Do you have an active NHIS card? ☐ Yes ☐ No

Section 2: Prevalence of Oral Health Problems

9. Have you ever been diagnosed with any oral/dental condition by a health professional?
   ☐ Yes ☐ No
   If *Yes*, specify: _____
10. In the past 12 months, have you experienced any of the following? *(Tick all that apply)*
    ☐ Toothache
    ☐ Bleeding gums
    ☐ Swollen gums or abscess
    ☐ Tooth loss

☐ Difficulty chewing

☐ Bad breath (halitosis)

☐ Oral ulcers/sores

☐ None of the above

11. How often do you experience toothache or mouth pain?

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

12. Have you lost any permanent teeth due to decay, gum disease, or injury?

☐ Yes ☐ No
If *Yes*, how many? _____

13. How would you rate your overall oral health status?

☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Very poor

Section 3: Effect of Oral Health on Well-Being *(Objective 1)*

Instructions: For each statement, indicate your level of agreement.
Scale: *Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5)*

14. Oral health problems caused frequent pain or discomfort. 1 2 3 4 5

15. My oral health issues affected my eating and nutrition. 1 2 3 4 5

16. Poor oral health affected my confidence and social life. 1 2 3 4 5

17. Oral health problems interfered with my work productivity. 1 2 3 4 5

18. Poor oral health caused me stress or anxiety. 1 2 3 4 5

Section 4: Factors Associated with Poor Oral Health and Well-Being

Oral Hygiene Practices

19. How often do you brush your teeth?

☐ Never ☐ Once daily ☐ Twice daily ☐ More than twice

20. What do you use to clean your teeth?

☐ Toothbrush & toothpaste ☐ Chewing stick ☐ Both ☐ Other: _____

21. Do you use fluoride toothpaste?

☐ Yes ☐ No ☐ Don’t know

22. How often do you eat sugary foods or drinks?

☐ Daily ☐ Several times a week ☐ Occasionally ☐ Rarely/Never

23. Do you use tobacco (smoking or chewing)?

☐ Yes ☐ No

24. Do you consume alcohol frequently?

☐ Yes ☐ No

Health and Access Factors

25. Do you have any chronic illness? (Tick all that apply)

☐ Hypertension ☐ Diabetes ☐ HIV/AIDS ☐ None

26. Have you visited a dentist or dental clinic in the past 12 months? ☐ Yes ☐ No
If *Yes*, what service did you receive?

☐ Tooth extraction ☐ Filling ☐ Cleaning/scaling ☐ Pain relief ☐ Other: _____

27. How far is the nearest dental clinic from your home? (in minutes walking/driving) _____

28. How would you describe the cost of dental care?

☐ Very affordable ☐ Affordable ☐ Expensive ☐ Very expensive

29. Do you have health insurance that covers dental services?

☐ Yes ☐ No ☐ Partially

Section 5: Oral Health-Seeking Behavior

30. What do you usually do first when you experience tooth pain or oral problems?

☐ Visit dentist/clinic ☐ Buy painkillers ☐ Use home/traditional remedies ☐ Do nothing
☐ Other: _____

31. How many times have you visited a dentist in the past year?

☐ None ☐ Once ☐ 2–3 times ☐ 4 times or more

32. If you did not visit a dentist when needed, what were the reasons? *(Tick all that apply)*

☐ Cost too high

☐ Distance too far

☐ Fear of dental procedures

☐ Prefer traditional medicine

☐ No dentist available

☐ Didn’t think it was serious

☐ Other: _____

33. How satisfied are you with dental/oral services in your area?

    ☐ Very satisfied ☐ Satisfied ☐ Neutral ☐ Dissatisfied ☐ Very dissatisfied

34. Would you seek dental care more often if services were cheaper or closer? ☐ Yes ☐ No ☐ Maybe

Section 6: Knowledge and Attitude on Oral Health

35. Do you know that poor oral health can affect overall health (e.g., heart disease, diabetes)? ☐ Yes ☐ No

36. Do you believe regular dental check-ups are necessary even without pain? ☐ Yes ☐ No ☐ Not sure

Section 7: Open-Ended Questions

37. In your own words, what do you think are the main causes of poor oral health in your community?

38. What can be done to improve oral health care in Ho Municipality?

APPENDIX 2: APPENDIX IV: ETHICAL CLEARANCE FROM ENSIGN GLOBAL UNIVERSITY

ENSIGN GLOBAL
UNIVERSITY

OUR REF: ENSIGN/IRB/EL/SN-299/03
YOUR REF:

August 4, 2025

INSTITUTIONAL REVIEW BOARD SECRETARIAT

Peace Dziedzorm Kukubor
Ensign Global University
Kpong.

Dear Peace,

ETHICAL CLEARANCE TO UNDERTAKE POSTGRADUATE RESEARCH

At the General Research Proposals Review Meeting of the *INSTITUTIONAL REVIEW BOARD (IRB)* of Ensign Global University held on Friday, August 1, 2025, your research proposal entitled **"The Effect of Poor Oral Health on the Overall Health and Well Being of People in the Ho Municipality, Volta Region Ghana"** was considered.

You have been granted Ethical Clearance to collect data for the said research under academic supervision within the IRB's specified frameworks and guidelines.

We wish you all the best.

Sincerely,

Dr. (Mrs.) Rebecca Acquaah-Arhin
IRB Chairperson

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