AKENTEN APPIAH- MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT

MPHIL THESIS

ASSESSING THE SATISFACTION LEVEL AND JOB-RELATED STRESS AMONG EMERGENCY MEDICAL TECHNICIANS IN THE BONO AND AHAFO REGIONS OF GHANA

MILLS ERIC

NOVEMBER, 2024

AKENTEN APPIAH- MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT

ASSESSING THE SATISFACTION LEVEL AND JOB-RELATED STRESS AMONG EMERGENCY MEDICAL TECHNICIANS IN THE BONO AND AHAFO REGIONS OF GHANA

MILLS ERIC

(200014087)

A Thesis Submitted to the Department of Public Health Education of the Faculty of Environment and Health Education, Akenten Appiah-Menka University of Skill Training and Entrepreneur Development, in Partial Fulfillment of the Requirement for the Award of a Master of Philosophy in Environmental and Occupational Health Education

NOVEMBER, 2024

DECLARATION

Candidate's declaration

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Name: MILLS ERIC

Signature: ……. **Date: …….**

Supervisors' Declaration

We hereby declare that the preparation and presentation of this thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development.

Principal Supervisor's Name: PROF. BISMARK DWUMFOUR-ASARE

Signature: …… **Date: …….**

Co-Supervisor's Name: ING. PROF. ISAAC MONNEY

Signature: ……..…….. **Date: …….**

ABSTRACT

The workplace has become a significant source of stress due to technological changes, work overload, and the demand for greater productivity. This cross-sectional study aimed to assess job satisfaction levels and the impact of job-related stress among Emergency Medical Technicians (EMTs) in the National Ambulance Service of the Bono and Ahafo regions in Ghana. 250 respondents participated, primarily female (59.6%) and aged 30-39. The study found widespread job dissatisfaction, with 95.2% unhappy with salaries, 56.4% dissatisfied with supervisor support, and high dissatisfaction with uniform supply (92.8%) and office accommodation (93.6%). Positive aspects included good coworker relationships (95.2%) and well-equipped ambulances (84.4%). Key stressors identified were poor road conditions (91.2%) and frequent critical incidents like robberies (96.8%). Older EMTs reported significantly higher stress levels (AOR = 3.83, $p = 0.011$). EMTs commonly used healthy stress-management strategies, such as relaxing after emergencies (89.6%), discussing experiences with colleagues (94.4%), and seeking counseling (90.4%). Job satisfaction and occupational stress were significantly related ($p < 0.05$), with environmental factors like frequent robberies and poor road conditions contributing to increased stress. Poor road conditions heightened stress nearly six-fold (AOR = 5.95, $p < 0.001$), emphasizing the role of work conditions in impacting EMTs' well-being. This study highlights significant dissatisfaction with salaries, work conditions, and supervisor support, though positive coworker relationships and autonomy in equipment use contributed to job satisfaction. Job-related stressors, including poor road conditions, patient handover delays, musculoskeletal injuries, and exposure to traumatic events, negatively impacted EMTs' physical and mental health, leading to symptoms such as anxiety, depression, and insomnia. The findings underscore the need for interventions addressing workplace stress and providing mental health support to enhance EMT well-being.

KEYWORDS: Emergency Medical Technician, Job Satisfaction, Job-related Stress, Ambulance.

ACKNOWLEDGEMENT

I am most grateful to GOD ALMIGHTY for His mercies and ample grace for me to succeed in my work. My sincere appreciation to my Supervisors, Prof. Bismarck Dwumfour-Asare, and Ing. Prof. Isaac Monney of the Department of Public Health Education, AAMUSTED for their support, patience, advice, and readiness that has been a constant support throughout this working process, the persistent effort and necessary guidance especially Prof. Dwumfour-Asare. God bless you abundantly. Many thanks to the management and staff of the National Ambulance Service, mostly to the C.E.O Professor Ahmed Nuhu Zakaria, my noble officers Principal AEMT Amoako Ayim regional manager Ahafo region, Principal AEMT. Armah Doku Oti Regional Manager, principal AEMT Amoah Bono regional director, and all staff of Bono and Ahafo regions. And to all those who helped me in diverse ways to the success of my research work, my colleagues in the service whom without their help, the work would not have been fruitful.

DEDICATION

I wholeheartedly dedicate this work to the Highest GOD (YAHWEH) and my lovely family (Mrs. Comfort E. Mills, Irene, Amoasi, Afriyie, Abayie, and Baffour).

TABLE OF CONTENTS

CHAPTER FOUR

CHAPTER FIVE

CHAPTER SIX

LIST OF TABLES

LIST OF FIGURES

Figures **Pages**

LIST OF ACRONYMS

ACRONYMS	MEANINGS
AAMUSTED	Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development
CHRPE	Committee on Human Research Publication and Ethics
EMS	Emergency Medical Services
EMTs	Emergency medical technicians
GHS	Ghana Health Services
HMT	Health Management Team
KNUST	Kwame Nkrumah University of Science and Technology
NAS	National Ambulance Service
PHEMS	Pre-hospital Emergency Medical Service
PTSD	Post-traumatic stress disorder
WGP	Worker goal processes

Ethical Consideration/Consent

Ethical clearance for the study was obtained from the Kwame Nkrumah University of Science and Technology (KNUST) /College of Health Science, Committee on Human Research Publication and Ethics with approved number CHRPE/AP/696/22. Also, permission was obtained from National Ambulance Service Headquarters, Accra as well as the regional administrators and various station heads of the service for the conduction of the study. An informed consent was also obtained from the respondents (EMTs) based on the Data Protection Act 2012 (Acts 843) and the ethical committee requirements. Data collection was restricted to emergency medical technicians of the National Ambulance Service in the Ahafo and Bono regions of Ghana. However, to reduce the risk of bias, participants were given full confidentiality of the data collected as well as secrecy of their information. EMTs were asked to be honest in their response as no names were written on the questionnaire to know one's information. Participants were also assured that the study was undertaken purposely for academic reasons to contribute to the well-being of the service (NAS) and personnel by putting corrective measures to provide a safe working environment and strategic measures to increase satisfaction levels and reduce job-related stress of EMTs.

Organization of the Study

This study is organized into six chapters. Chapter one consists of the background of the study, Problem statement, research objectives, research questions, justification of the study, significance of the study, organization of the study report, and definition of terms. Chapter two focuses on the literature review and consists of the definition of concepts, a historical overview of global Ambulances, job stress, and job satisfaction level, the link between occupational stress and job satisfaction, stress management at the workplace, and a summary of the literature review. Chapter three consists of the research design, population, sample and sampling procedure, research tools, data collection procedure, method of data analysis, and ethical consideration. Chapter four deals with the presentation of the results. Chapter five discusses the findings. Chapter six deals with the summary, conclusion, recommendations as well as direction for future research to aid in further studies by other researchers.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Emergency medical technicians (EMTs) are essential frontline responders providing urgent care to individuals facing life-threatening emergencies worldwide. Their work often places them in high-stress environments involving critical decision-making under extreme pressure. Studies indicate that EMTs frequently encounter trauma and challenging conditions, including exposure to infectious diseases, violent confrontations, and high-risk rescues (Afshari, 2021). These challenges result in an increased rate of burnout, anxiety, depression, and decreased job satisfaction among EMTs, which ultimately affect the quality of patient care (Khan, 2018).

Globally, healthcare systems and ambulance services have intensified their demands on EMTs, placing a greater emphasis on productivity, technological adaptation, and swift response times, often with limited resources. The pressure to perform at this high level, while simultaneously addressing the needs of patients in urgent care, significantly impacts EMTs' mental and physical health. Research indicates that job-related stress is considerably higher among EMTs compared to other healthcare professionals, with stress levels up to 27% higher than nurses in similar roles (Afshari et al., 2021a). This burden has led to high turnover rates, absenteeism, and decreased morale, which, in turn, compromise service quality and patient satisfaction.

In Ghana, EMTs face additional constraints due to systemic challenges such as inadequate infrastructure, insufficient staffing, and limited access to essential resources (Mahama et al., 2018).

The scarcity of ambulances and inadequate personnel significantly strain EMTs, who often operate with minimal support. According to the 2021 annual report by the National Ambulance Service (NAS), there is only one EMT for every 4,909 individuals, a ratio that highlights the intense workload and stresses on EMTs. This workload often leads to physical and emotional exhaustion, impairing their ability to provide optimal pre-hospital care.

In light of these conditions, assessing job satisfaction levels and job-related stress among EMTs is essential, especially in Ghana's Bono and Ahafo regions, where the lack of resources exacerbates these challenges. Understanding the specific factors that influence job satisfaction and stress among EMTs in these regions could lead to targeted interventions aimed at improving their well-being and work environment, thus enhancing the overall quality of emergency medical services in Ghana.

1.2 Problem Statement

Emergency medical technicians in Ghana play a crucial role as front liners providing pre-hospital care under stressful situations. They face high-risk situations such as exposure to infectious diseases, physical assaults, accidents, armed robbery attacks, and life-threatening incidents, leading to job dissatisfaction and deteriorated mental and physical health. The 2021 annual report of the National Ambulance highlights EMT shortages and poor working conditions, with EMTs frequently facing traumatic events with limited

institutional support. An increase in health implications that include traumatic stress, and emotional and psychological disorder. As at the time of this study, no research had been done on the satisfaction levels and job-related stress among EMTs. However, this study seeks to evaluate satisfaction levels and job-related stress among EMTs in the Bono and Ahafo regions, providing insights to improve service conditions and support for EMTs in Ghana.

1.3 Study Objective

The main aim of the study is to assess satisfaction levels and the effect of job-related stress amongst emergency medical technicians in the Ahafo and Bono regions.

1.3.1 Specific objectives

The specific objectives of the study seek to:

1. To evaluate factors that contribute to job satisfaction among Emergency Medical Technicians
2. Assess specific job-related stress among ambulance personnel
3. Determine the impact of job-related stress on personnel's health
4. Factors that significantly influence Emergency Medical Technicians satisfaction

1.4 Research questions

1. What are the specific factors that influence job satisfaction among medical technicians?
2. What factors contribute to job-related stress among Emergency Medical Technicians?

3. What are the physical and mental health challenges faced by Emergency Medical Technicians
4. What influences emergency medical technicians' satisfaction

1.5 Significance of the study

This study is valuable to the National Ambulance Service (NAS), health facilities, non-governmental organizations, and civil society organizations involved in emergency medical services in Ghana.

It provides critical, up-to-date data on job satisfaction levels and identifies specific stressors faced by Emergency Medical Technicians (EMTs) in the Bono and Ahafo regions. The findings would inform policymakers and service administrators to develop targeted interventions and programs aimed at improving coping strategies, enhancing job satisfaction, and reducing occupational stress among EMTs, ultimately contributing to better quality of emergency medical services and patient outcomes in these regions.

1.6 Justification of the study

During medical emergencies and traumatic incidents, Ghanaians often rely on the National Ambulance Service (NAS) for critical assistance, despite its limited resources, including shortages of Medical Technicians and ambulances. Currently, one ambulance serves an average of 92,997 people, and the EMT-to-patient ratio is 1:4,909, as reported in the NAS 2021 end-of-year report. Medics in the NAS frequently face numerous occupational hazards that add considerable stress. These hazards include vehicular accidents, exposure to infectious diseases, verbal abuse, robbery attacks, musculoskeletal injuries, and sleep deprivation (Halpern et al., 2009).

In 2020, NAS reported nineteen ambulance accidents, eleven-armed robbery attacks, and seventy-eight COVID-19 infections among medics. Despite the high-risk nature of their work, Emergency Medical Technicians (EMTs) lack adequate support policies, such as a conditions-of-service policy that ensures risk allowances and other essential benefits. This absence of support exacerbates the stress EMTs experience on the job.

Furthermore, there is a notable lack of measures or coping strategies to alleviate the psychological trauma EMTs endure while responding to life-threatening situations. The findings of this study will highlight the need for the Health Management Team (HMT) to design appropriate interventions and specific measures to reduce occupational stress, improve health outcomes, and create a more supportive and safer working environment for effective pre-hospital care.

1.7 Scope of the Study

The scope of this study focuses on assessing job satisfaction levels and job-related stress among Emergency Medical Technicians (EMTs) in the Bono and Ahafo regions of Ghana. It examines specific factors contributing to job satisfaction, common stressors EMTs face, and the impact of these stressors on their health and job performance. Data collection involved EMTs within these regions who have worked within the region for at least a year, and findings would be relevant to understanding workplace challenges specific to emergency medical services. The study's scope is limited to EMTs' perspectives within these geographic areas and excludes other health personnel or emergency service providers outside these regions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review has been categorized into various sections including; a historical overview of global Ambulances, occupational stressors in EMS, job satisfaction and how work pleasure and job stress are related, and stress management at the workplace.

2.2 History of Global Ambulance Services

The origins of ambulance services can be traced back to ancient times, when horse-drawn ambulances (carts) were used to transport casualties. Ambulances were first utilized for emergency transport in 1487 by Spanish forces during the siege of Malaga, led by the Catholic Monarchs (Kohn, 2022). Baron Jean later implemented the first combat medical plan, which included transferring the wounded from the battlefield to health centers, recognizing the significance of using ambulances to expedite time to surgical intervention (Felkai et al., 2017).

In 1865, the first civilian ambulance service, managed by a nurse or physician in the patient compartment, was established in Cincinnati, Ohio (Kohn, 2022). In 1869, two health centers in New York adopted this model. Their ambulances were specialized horse-drawn carts carrying medical interns from different hospital wards. During the Korean and Vietnam Wars (1952 and 1964), there was a high volume of casualties needing rapid transport to field hospitals. For the first time, helicopters were used to transport injured patients to these facilities (Felkai & Debrődi, 2017).

By the late 1960s, evacuation times typically ranged from 10 to 20 minutes. As private pre-hospital emergency care grew, many nations, especially in Europe, began integrating pre-hospital emergency care services (Bos et al., 2015).

The Millar report recommended providing care during patient transport, which led to the establishment of training programs for ambulance staff in basic life support, including oxygen administration and other therapeutic procedures. In Europe, this evolution led to well-organized, technologically advanced ambulance services with dedicated emergency medical technicians and sophisticated communication equipment (Bos et al., 2015).

In 1974, the Indiana Emergency Medical Services (EMS) Commission was created to oversee and accredit facilities, individuals, and services providing emergency medical treatment (Koval et al., 2020). This commission included municipal fire and police departments, volunteer fire departments, and private ambulance services staffed by certified EMTs, registered nurses, and licensed physicians (Felkai, 2017). In 1984 and 2016, Zimbabwe and Sierra Leone established EMS systems with well-equipped ambulances and trained EMTs and paramedics (Muchatuta et al., 2022).

The development of modern ambulances was significantly influenced by technological advancements in the 19th and 20th centuries (Bos et al., 2015). During World War I, motorized ambulances, introduced by the Red Cross, began replacing horse-drawn vehicles (Ilić et al., 2020). In the 1960s, the report "Accidental Death and Disability: The Neglected Disease of Modern Society" emphasized the need for standardized emergency response systems. This, along with the National Highway Traffic Safety Act, laid the foundation for EMS systems (Truta et al., 2018). The EMS Systems Act of 1973 supported EMS growth across the United States by providing funding for numerous EMS

systems. Today, EMS has progressed in care standards, education, and the integration of real-time patient data, highlighting the importance of continuous improvement (Sedlár, 2021).

2.3 Working Conditions of EMS Employees

Adverse or dangerous working conditions refer to physical aspects of a workplace that make it difficult or unsafe for employees, such as rooms without electricity or structurally compromised buildings that impact personal safety (Taylor et al., 2022). Studies on work conditions and midlevel worker goal processes (WGP) have shown significant impacts on job satisfaction, burnout, depression, and the overall well-being of medics (Bashehab et al., 2021). For example, during the September 11 attacks, more than a hundred EMS personnel were injured, yet they continued their rescue efforts despite personal risk (Motamedzade et al., 2019). Dedicated to saving lives, these professionals often ignore safety protocols due to their sense of duty to patients, even putting themselves at risk (Safarpour et al., 2018).

EMS workers routinely face life-threatening injuries and high-stress situations. They work in unstructured environments, traveling at high speeds and dealing with traumatic incidents regularly. Alongside EMTs, they coordinate with fire departments, police, and towing services during mass casualty incidents. This constant exposure to intense situations necessitates better working conditions due to the high levels of stress EMS work entails (Almutairi & Azza, 2020). The first responders at an emergency scene are EMTs, who play a critical role in patient survival and transport to advanced medical facilities (Koval et al., 2020).

EMS work is associated with high job stress, leading to burnout, absenteeism, and turnover. These pressures are worsened by labor shortages and newly qualified staff who often lack adequate skills, creating frustration, especially when limited resources restrict the quality of care. Adequate, functional equipment is crucial for EMS personnel, as faulty devices can result in incorrect diagnoses and poor patient outcomes (Eiche et al., 2021).

According to Lombard (2006), issues such as poor pay, unreliable equipment, and lack of supplies contribute to EMS workers' stress (Felkai, 2017). Long-term exposure to stress without adequate support systems for reflection and processing can negatively impact their health and productivity (Caverley, 2005). To address these challenges, EMS organizations should implement strategies to manage staff stress and reduce turnover and absenteeism.

2.4 EMTs Introduced in the Global EMS System

The education and training of pre-hospital emergency care providers have evolved significantly. Originally, nurses and volunteers provided first aid and transport. However, the introduction of trained EMTs to deliver pre-hospital care has greatly improved global EMS (Mould-Millman et al., 2014). African countries like Rwanda, Malawi, Ghana, Kenya, and Sierra Leone have developed EMT training programs for diverse acute medical needs. In the United State, the Division of Medical Sciences and National Research Council highlighted that motor vehicle accidents were a major cause of death and disability, leading to the creation of the first EMT curriculum (Kohn, 2022). This curriculum included extensive training in the classroom, military settings, hospitals, and ambulance stations.

2.5 History and Establishment of Ambulance Service in Ghana

Pre-hospital Emergency Medical Service (PHEMS) is vital for treating accident victims and the sick, with the potential to save lives. Ghana's mission in establishing a national ambulance service is to create a responsive PHEMS that provides timely emergency care in line with UN SDG 3 by 2030. The Ghana National Ambulance Service (NAS) was established following the 2001 Accra Sports Stadium disaster, which claimed over 127 lives due to a lack of pre-hospital care (Mould-Millman et al., 2015).

After a presidential commission report, President John Agyekum Kufuor directed the Ministry of Health, in collaboration with the Ghana National Fire Service, to establish a national EMS.

NAS was launched in 2004 as a pilot with seven stations across three regions, staffed by personnel from the Ghana National Fire Service and trained civilians (Mahama et al., 2018). In 2008, EMTs were formally recruited to provide quality pre-hospital care to trauma and medical patients. National Ambulance Service now, operates 24/7 across Ghana’s constituencies, collaborating with emergency providers like the Fire Service and private ambulances. Since March 2020, NAS has responded to nearly 2,800 COVID-19 cases and over 41,900 other medical and trauma cases, saving lives and preventing numerous deaths (Ducar et al., 2020).

2.6 Occupational Stressors in Emergency Medical Services

Emergency Medical Technicians (EMTs) provide care to patients with severe health conditions and those with multiple injuries, exposing them to various unpredictable stressors and threats. Consequently, they experience high-stress levels and chronic

stressors. In India, 22% of EMTs experience stress-related complications such as depression, anxiety, anger management issues, social withdrawal, sleep disorders, job dissatisfaction, burnout, workplace rudeness, suicide, post-traumatic stress disorder (PTSD), risk behaviors, and other psychological issues. This elevated stress level also increases the likelihood of medical errors (Koval et al., 2020).

Boudreaux identified occupational stress as a significant issue within the EMS system that requires attention (Dahlan et al., 2016). When EMTs cannot manage job-related pressure, it affects their physical and mental health. Job stress leads to reduced job satisfaction, decreased performance, increased alcohol and tobacco use, and burnout (Temesgen et al., 2018). EMTs often experience psychological and behavioral stress responses, including distressing memories, avoidance behaviors, and changes in physical and emotional reactions

2.7 Stress Disorder

Chronic stress involves persistent challenges, conflicts, and dangers many people face daily in their work (Bounds, 2006). For EMTs, chronic stress is associated with role strain, work overload, insufficient salary, lack of administrative support, negative perceptions of ambulance services, workplace conflicts, and interference with personal activities. According to the 2011 Career Cast Report, emergency services rank as the 9th most stressful profession, and additional stress factors for EMTs include case documentation, scheduling demands, and interactions with peers and superiors, which further strain their work environment (Bennett et al., 2004).

Halpern (2014) defines a critical incident as an emergency call that triggers an unusually strong emotional response. Such incidents, whether singular events or cumulative,

increase the risk of adverse psychological outcomes (Halpern et al., 2014).A study on EMTs' mental health found that they experience more psychological challenges than 25 other professions (Halpern et al., 2014). Another study on critical incidents encountered by EMTs revealed physical reactions like sweating and shaking, distressing emotions such as fear and guilt, and sleep disturbances (Alexander & Klein, 2001)Among 105 participants, 52% reported lingering distress from a disturbing incident, while others described persistent stress from traumatic events. EMTs face high-stakes situations requiring prompt responses to prevent further harm or death, which can be especially challenging when lacking adequate knowledge, skills, or equipment (Bashawir et al., 2015).

In the United States, 30% of paramedics report stress or burnout at work, often due to dealing with traumatic cases beyond their usual coping capacity, and these stress reactions can lead to mental health impairments, which cause significant distress and functional limitations for EMTs (Boudreaux, 2015).

2.8 Job Satisfaction

While some individuals derive fulfillment from their work, others experience stress and dissatisfaction (Eiche, 2021). Job satisfaction reflects one’s attitude toward work, shaped by individual perceptions (Sharma, 2018). Research shows that job satisfaction positively affects employee performance by fostering a positive attitude toward the organization, reducing absenteeism and turnover, and promoting team cohesion (Choi & Yun, 2019). Job satisfaction encompasses various factors, including pay, promotion opportunities, relationships with coworkers, and the nature of the work itself (Gedif et al., 2018). It is

linked to organizational behaviors, engagement, productivity, and employee retention, emphasizing its significance for both individual well-being and organizational success.

2.8.1 Factors Influencing EMTs' Job Satisfaction

EMTs, satisfaction is closely tied to factors like compensation, supervisor support, workplace conditions, and work-life balance (Long, 2016). These elements impact dedication, output, and performance, affecting job satisfaction directly. Studies show that job satisfaction correlates with sociodemographic factors, such as gender, age, marital status, education, distance from work, employment status, and professional training. Newly trained EMTs often find initial job roles satisfying due to a perceived lack of responsibility, while more experienced EMTs report lower satisfaction due to increasing job demands (Choi & Yun, 2019). Additionally, job insecurity, work overload, role conflicts, and limited job autonomy significantly influence stress levels among EMTs (Iwu, 2013).

Incentives: Satisfactory income and benefits are essential for job satisfaction, with additional allowances seen as strong motivators (Sharma, 2018). Studies indicate that more advanced EMTs experience higher job satisfaction due to greater job control compared to basic EMTs

Relationships with Coworkers: In a study, 82% of senior medical officers reported positive relationships with junior colleagues, though 36% of juniors felt disempowered in contributing to workplace policies (Khan, 2018). Another study on German paramedics found that positive relationships with immediate colleagues enhanced job satisfaction (Eiche et al., 2021). Education also plays a role, as higher educational attainment often leads to greater job satisfaction due to increased skill levels and job

advancement opportunities. However, individuals with higher education may hold greater expectations for job satisfaction and responsibility, which are not always met (Eiche, 2021).

2.9 Occupational Stress and Job Satisfaction Levels

Employees with low occupational stress generally experience higher job satisfaction than those with high. Research has demonstrated a significant inverse relationship between job satisfaction and occupational stress (Donnelly, 2010). Role overload, role ambiguity, and work-family conflict are key predictors of workplace stress, negatively impacting job satisfaction. Role overload has been identified as a significant cause of stress, serving as a strong negative predictor of job satisfaction, and EMTs often felt less satisfied and more negative about their work when they perceived that job demands exceeded their abilities (Afshari et al., 2021).

Likewise, Kemery observed that while role ambiguity and role conflict individually reduced job satisfaction, their combined effect was more complex (Singh et al., 2019). Karadal in his study analyzed the impact of role conflict on job satisfaction and organizational commitment, finding both to be negatively correlated with EMTs' job satisfaction and organizational commitment (Batool, 2017).

Work-family conflict is another significant concern, with adverse effects on job satisfaction. Unique demands in correctional and EMS work such as on-call duties and frequent job transfers exacerbate this tension. For instance, Taiwanese EMS officers experiencing work-family conflict reported lower levels of job satisfaction. However, found out that organizational policies promoting flexibility could reduce the perception

of work interfering with family life, thereby improving organizational commitment and job satisfaction (Dehghannezhad et al., 2020).

However, dissatisfaction arises when individuals' expectations and aspirations clash with their current job conditions, with job satisfaction decreasing as sources of workplace stress increase (Rao & Karumuri, 2019).

2.10 Managing Workplace Stress

Numerous studies have demonstrated the effectiveness of stress management programs in reducing stress symptoms among employees. Kagan and Watson implemented a three-year psycho-educational stress management program for EMTs, with follow-ups at nine and sixteen months (Ducar et al., 2020). This program positively impacted various areas, including depression, anxiety, depersonalization, and a sense of accomplishment, as reflected by a doubling of appreciation letters received by EMTs after the training. The study similarly, concluded from a 20-year analysis that stress management strategies combining multiple techniques were the most effective.

A study illustrated that constructive coping could be encouraged through analytical and emotionally detached responses to workplace accidents. Participants practicing these techniques showed reduced physiological arousal and better recall of events (Halpern et al., 2009). Exploring the use of visuomotor behavior rehearsal, a visualization technique where EMTs imagine the ideal performance of a task before execution, as a means of coping with stressful situations. Seeking support from mental health professionals specializing in stress management and discussing challenges with coworkers or friends outside of work are also effective strategies for managing stress (Halpern et al., 2009).

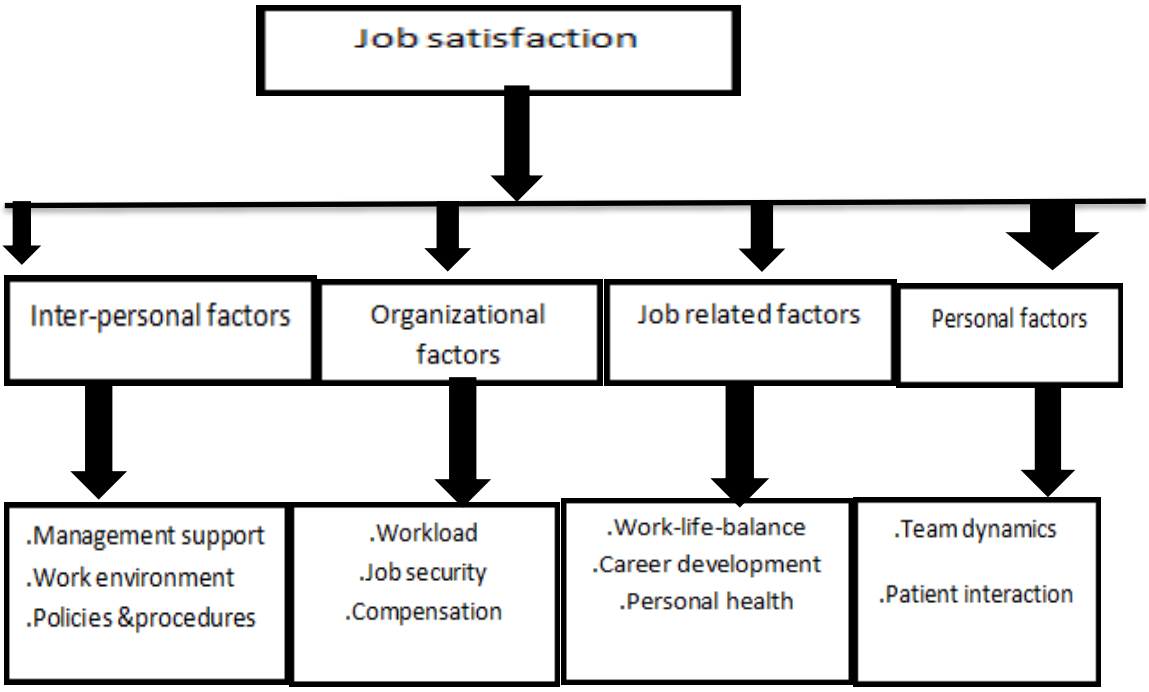
2.11 Assessing EMT Performance

The COVID-19 pandemic underscored the critical role of EMTs in healthcare, increasing public interest in their working conditions and performance. The shortage of EMTs has exposed a vulnerability within global healthcare systems (Eiche et al., 2021). In the United States, the annual turnover rate for paramedics is close to 10%, and similar trends are reported in Germany, where 46% of paramedics have considered leaving EMS due to job dissatisfaction (Aklilu et al., 2020). Paramedics often report lower well-being and higher rates of burnout and depression compared to other professions.

Evidence-based performance indicators are essential in evaluating and enhancing clinical care, staff performance, and service delivery within EMS. These indicators, including structure, process, and outcome measures, assess aspects such as response time reliability, protocol compliance, and patient outcomes. Regular training sessions particularly low-dose but high-frequency are recommended for reinforcing resuscitation skills among EMTs. Training models should emphasize teamwork and simulations, focusing on planning, leadership, and communication skills critical for effective coordination during resuscitation (Sedlár, 2021).

Post-resuscitation debriefing procedures also enhance objective assessment by underscoring the importance of teamwork, preparation, leadership, and communication in emergency response.

Figure 2.1 Conceptual framework



Conceptual framework for job satisfaction among Emergency Medical Technicians typically involves identified and organized the factors that influence their satisfaction level. The inter-personal factors or socio-demographic factors play resilient and motivational role.

Job-related factors such as workload, job stress, opportunity for career advancement, the nature of the work itself, and exposure to traumatic events were significant consideration that influence satisfaction among EMTs. However, organizational factors like management support, workplace culture, availability of mental health resources, and adequate training and equipment, as well as external factors that include societal perceptions of EMTs profession, and community support had influence on EMTs level of satisfaction.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter of the thesis focuses on the study area and the methodology employed. It discusses the following sections: Study Design, Study Area, Study Population, Inclusion and Exclusion Criteria, Sample Size Estimation, Sampling Techniques, Data Collection Tools and Techniques, Training of Research Assistants, Pilot Study, Data Collection Procedures, Data Management, Statistical Analysis, and Ethical Review and Clearance.

3.2 Study design

This study employed a cross-sectional design to assess the job satisfaction level of Emergency Medical Technicians (EMTs') in the Bono and Ahafo regions of the National Ambulance Service.

3.3 Study area

The study area encompasses the Bono and Ahafo regions of Ghana, located in the country's middle and western parts. These regions are characterized by a mix of urban and rural settings, with varying access to emergency medical services. The National Ambulance Service operates across these areas, providing pre-hospital care to the population, yet faces challenges such as inadequate resources, limited personnel, and the high demands of emergency medical response.

3.3.1 Bono Region

The Bono Region is one of Ghana's newest administrative divisions, created when it was separated from the Brong-Ahafo Region. Sunyani, the regional capital, was named the cleanest and greenest city in Ghana by the Ghana Tourism Board in 2007 (Yaw Asuah et al., 2016). Sunyani prides itself on being the cleanest capital city and a major destination for conferences.

The Bono Region is bordered to the north by the Savannah Region, to the west by the Ghana-Côte d'Ivoire international border, to the east by Bono East, and to the south by the Ahafo Region (Adum-Kyeremeh, 2018). According to the 2020 census by the Ghana Statistical Service, the region has a population of 1,168,807. The National Ambulance Service began its operations in the region with one station in 2008, expanding to four stations by 2012. Currently, the service operates in all twelve districts, with thirteen ambulances serving the population. These mobile clinics cater to a population of 1,168,807, meaning that one ambulance is responsible for attending to 97,400 people(Mould-Millman et al., 2015).

The ratio of Emergency Medical Technicians (EMTs) to the population in the Bono Region is 112 EMTs to 1,168,807 people (Flaherty et al., 2020). This means that each EMT provides pre-hospital care to approximately 10,435 people, which significantly increases their workload and leads to stress among the medics.

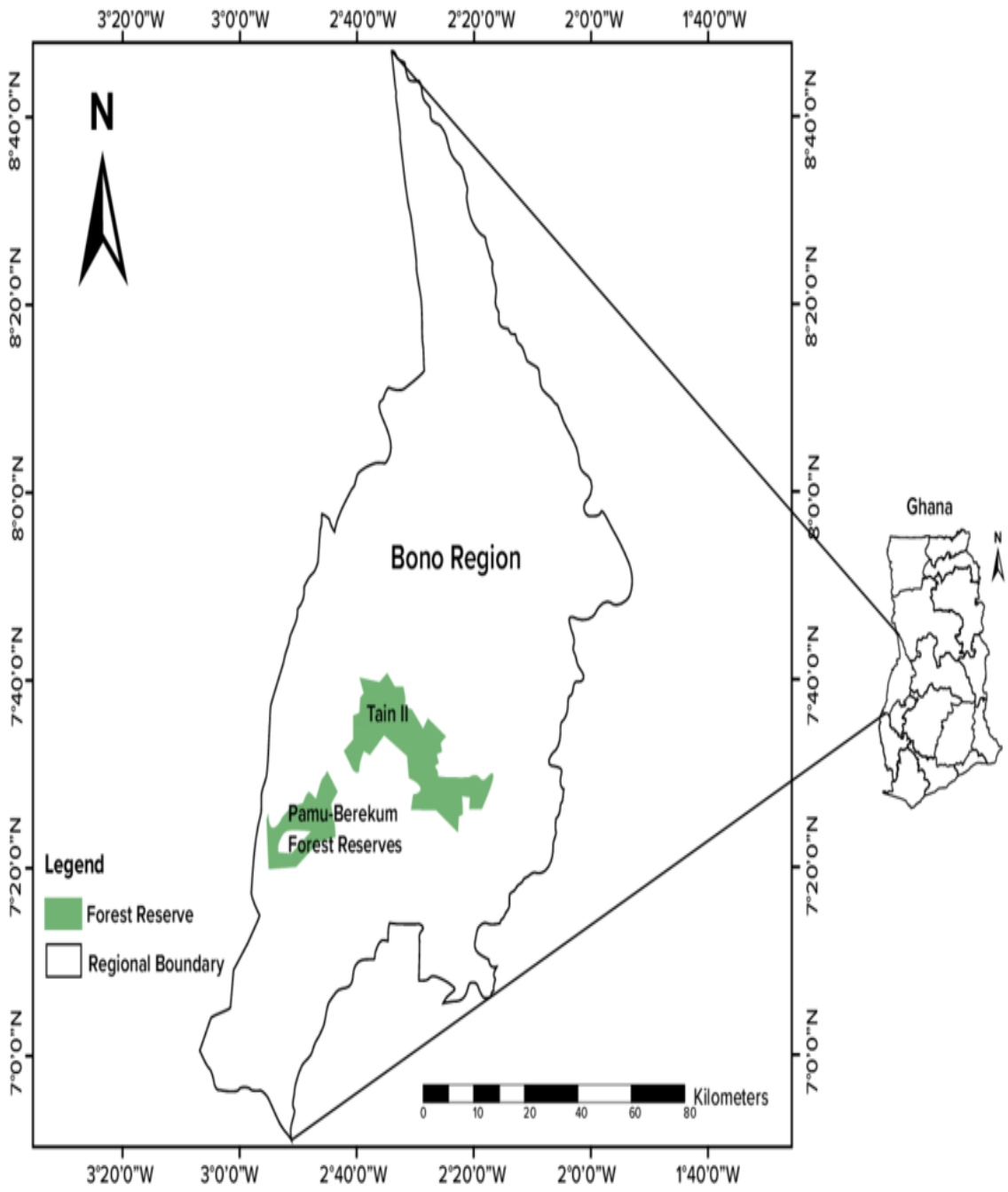


Figure 3.1: Map of Bono Region (Foli et al., 2022)

3.3.2 Ahafo Region

The Ahafo region was carved out of the southeastern part of the Brong Ahafo region as one of the newly created regions in Ghana with Goaso being the regional capital. The Ahafo region is bordered on the North and West by the Bono region, East by the Ashanti region, and South by the Western North region. The Ahafo region is made up of six districts, with vegetation mainly of fertile soil, grassland, and trees that prevent drought. The Ahafo Region known of six administrative districts, occupies a total land surface of 5196 km^2 area of Ghana. However, with a population of 564,668, accounting for 1.4% of Ghana's total population. The Region is known for its gold bar and Cocoa production (Kyereh et al., 2015). The national ambulance service started its operational duties in the Ahafo region with one station (Bechem) in 2012, then Brong Ahafo. According to NAS, 2021 annual report, the service currently operates in six constituencies, based on the One Constituency One Ambulance project by the New Patriotic Party government within districts in the Ahafo region. These six (6) ambulances serve a population of five hundred and sixty-four thousand, six hundred sixty- eight (564,668), thus one ambulance attends to ninety-four thousand, one hundred and eleven people (1 ambulance: 94,111 people). However, the Emergency medical technicians (EMTs) and population of the Ahafo region ratio is fifty-five (55) EMTs to 564,668 people Thus, one EMT provides Pre-hospital emergency medical care to 10,266 people in the region, and this inadequate staff cannot support the effective provision of Pre-hospital Care and also lead to work overload (Flaherty et al., 2020).

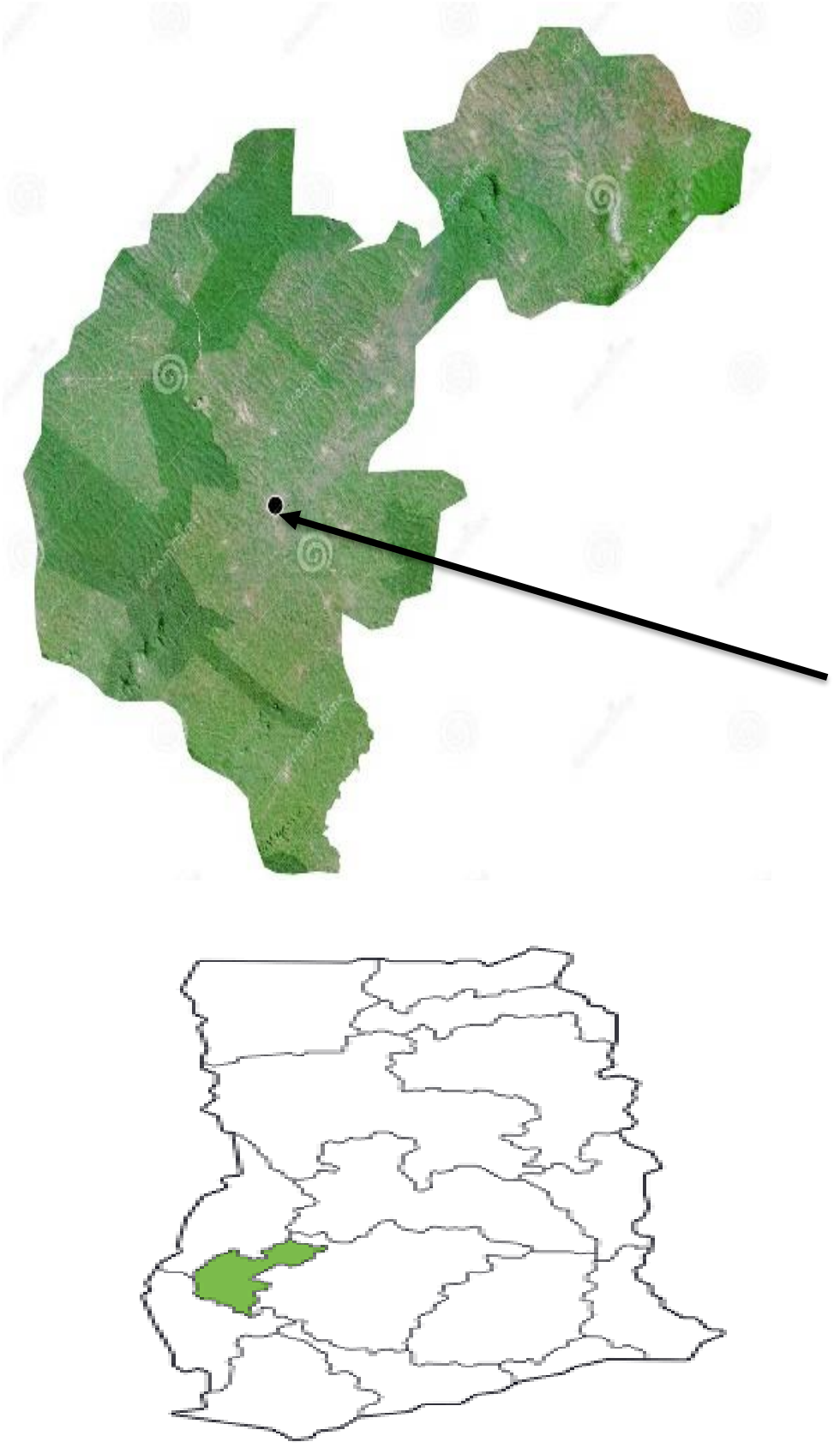


Figure 3.2: Map of Ahafo Region

3.4 Study population and sample size estimation

The study population for this study included EMTs in the operation unit of the various National Ambulance Service stations in the two (2) selected regions of interest namely Bono and Ahafo regions of Ghana. The population (EMTs) in the two regions is estimated at 264 EMT from all the 18 stations.

3.5 Sampling Technique

The study regions Bono and Ahafo were selected purposively for this research. The selection of the respondents in the two regions included all the emergency medical technicians due to the number of the population in the two regions under study

3.6 Data Collection Tools

A semi-structured questionnaire was developed, incorporating a modified job stress questionnaire from various studies, to assess job satisfaction levels and job-related stress among Emergency Medical Technicians (EMTs) of the National Ambulance Service. The questionnaire was designed to gather information on the socio-demographic characteristics of the respondents, including age, marital status, education level, job satisfaction, job-related stress, and the impact of stress on EMTs.

The questionnaire was then converted into an electronic format using Google Forms. It was shared with participants through their regional group WhatsApp platforms for online completion and submission. To ensure data integrity, respondents were instructed to submit their responses only once, using their email addresses, which helped to prevent duplicate submissions in line with the Google Form's format.

3.7 Pilot Study

Pre-testing of the data gathering tool was done using the EMTs on internship at the regional hospital Sunyani, to ensure its validity and sequence. Before the main trials, the questionnaire linked to the Google form was then uploaded onto a WhatsApp platform and pre-tested with an Android phone among the EMTS on internship to final changes and other input.

3.8 Data Collection Procedures

For the various operating stations, the questionnaires linked to the Google form were uploaded to the responders' WhatsApp platforms. Participants with Android phones downloaded the tool, followed the instructions, and completed the questionnaires before submitting them online for cloud storage. For participants who could not be reached through WhatsApp, the questionnaire (hard copy) was circulated to them to complete and return to the researcher.

3.9 Data Management and Analysis

The collected data was first edited to correct any errors, then coded, and entered into the Statistical Package for Social Sciences version 21 for analysis. Descriptive statistics, including frequency and percentage, were used to summarize the baseline characteristics of the respondents. The results were presented in tables and charts for clarity.

To explore associations between categorical variables, the Chi-squared test was employed. Additionally, logistic regression analysis was used to assess the relationships between socio-demographic characteristics and EMTs' job satisfaction, as well as the stress experienced by EMTs. Multiple regression analysis was further applied to

determine the association between these socio-demographic factors and both job satisfaction and job-related stress among the EMTs

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the results of the study. The presentation of the results is based on the specific objectives. It covers the following sub-headings: Socio-demographic characteristics of EMTs, factors that contribute to job satisfaction among EMTs, job-related stress among ambulance personnel, and impact of job-related stress on personnel's health.

4.2 Socio-Demographic Characteristics of EMTs

Table 4.1, shows the socio-demographic characteristics of the two hundred and fifty (250) respondents who participated in the study. A majority (59.6%) were females, 52.22% were aged 30-39years, 68.4% had General Certificate of Education 'O' level/Senior Secondary Certificate Examination, 51.2% were single, all were full-time employed, 78.4% practiced basic level of EMT, 49.6% had 5 years' service experience, 46.8% were at the municipal grounds.

Table 4.1: Socio-demographic Characteristics of EMTs

Variables	**Frequency (N=250)**	**Percentage (%)**
	33.7 (±6.28)	
Gender		
Male	101	40.4
Female	149	59.6
Age Range		
20 - 29 years	70	28.3
30 -39 years	129	52.2
40 and above	48	19.4

Table 4.1: Socio-demographic Characteristics of EMTs (con't)

Variables	Frequency (N=250)	Percentage (%)
Educational		
MSLC/BECE	4	1.6
GCE/O level/SSCE/WASSCE	171	68.4
Diploma	16	6.4
Bachelor Degree	43	17.2
Master Degree	8	3.2
Marital Status		
Married	122	48.8
Single	128	51.2
Level of Practice		
EMT Advance	45	18.0
EMT Basic	205	82.0
Years of Practice		
Below 5 years	124	49.6
5-10 years	105	42.0
Above 10 years	21	8.4
Location of Operation		
District grounds	116	46.4
Municipal grounds	134	53.6

Source: field survey, (2021).

4.3 Factors Contribute to Job Satisfaction among EMTs

4.3.1 Job Satisfaction Level of EMTs

In Table 4.2, 95.2% were dissatisfied with salary, 56.4% were dissatisfied with supervisors' support, 51.2% were unhappy with the condition of the working environment, 95.2% were satisfied with relationships with co-workers and 88% were satisfied with duty schedules.

Table 4.2 Job Satisfaction Level of EMTs

Variable	Frequency (N=250)	Percentage (%)
Salary/Pay		
Dissatisfied	238	95.2
Satisfied	12	4.8
Supervisors /Management support		
Dissatisfied	141	56.4
Satisfied	109	43.6
Condition of environment		
Dissatisfied	128	51.2
Satisfied	122	48.8
Relationship with co-workers		
Dissatisfied	12	4.8
Satisfied	238	95.2
Duty schedules		
Dissatisfied	30	12.0
Satisfied	220	88.0

Source: Field Survey, (2021)

4.3.2 Incentives and Allowance

Table 4.3 shows the EMTs' level of agreement with incentives and allowances, 92.8% disagree with a frequent supply of uniforms, 84.7% disagree with a frequent supply of reward, 93.6% disagree with frequent supply of office accommodation, 82.4% disagree with frequent supply rent allowance, 83.2% for risk allowance and promotion assurance had the highest agreement of (73.2%).

Table 4.3 Incentives and Allowance

Incentives	Frequency (N=250)	Percentages (%)
Frequent supply of uniforms		
Disagree	232	92.8
Agree	18	7.2
Promotion assurance		
Disagree	67	26.8
Agree	183	73.2
Reward (citation, etc.)		
Disagree	211	84.7
Agree	38	15.3
Accommodation		
Disagree	234	93.6
Agree	16	6.4
Rent Allowance		
Disagree	206	82.4
Agree	44	17.6
Risk Allowance		
Disagree	208	83.2
Agree	42	16.8

Source: Field Survey, (2021)

4.3.3 Office Standards and Availability of Equipment

Table 4.4 shows the level of satisfaction with office standards and availability of equipment, 65.6% agreed on a higher level of adequate consumables supply (65.6%), 59.2% agree on adequate items replacement in office, 84.4% well-equipped ambulance with the necessary gargets; monitor, infusion pump, 75.6% adequate working space in the ambulance. However, majority (63.2%) disagree with the existence of enough office accommodation.

Table 4.4 Stations' Office Standards and Availability of Equipment

Variable	Frequency N=250	Percentage (%)
Adequate consumables		
Disagree	86	34.4
Agree	164	65.6
Office equipment		
Disagree	102	40.8
Agree	148	59.2
Enough office accommodation		
Disagree	158	63.2
Agree	92	36.8
Well-equipped ambulance		
Disagree	39	15.6
Agree	211	84.4
Adequate working space		
Disagree	61	24.4
Agree	189	75.6

Source: Field Survey, (2021)

4.3.4 Socio-Demographic Characteristics and Job Satisfaction of Respondents

Table 4.5 shows the statistical association between educational qualification and job satisfaction. As well as the level of practice and job satisfaction, with p-values less than 0.05.

Table 4.5: Socio-Demographic Characteristics and Job Satisfaction of Respondents

Variables	Job Satisfaction of Respondents		X^2 (p-value)
	Not Satisfied (%)	Satisfied (%)	
Gender			
Male	67 (44.9)	82 (55.1)	0.30 (0.581)
Female	49 (48.5)	52 (51.5)	
Age			
Below 30 years	33 (47.1)	37 (52.9)	
30 – 39 years	63 (47.7)	69 (52.3)	0.54 (0.763)
40 and above	20 (41.7)	28 (58.3)	
Educational Qualification			
GCE 'O' LEVEL, SSCE/WASSCE	65 (38.1)	106 (61.9)	
Diploma	14 (87.5)	2 (12.5)	
Bachelor Degree	23 (53.5)	20 (46.5)	**21.86 (0.001)**
Master Degree	6 (75.0)	2 (25.0)	
Other, (NVTI)	6 (75.0)	2 (25.0)	
Marital Status			
Married	52 (42.6)	70 (57.4)	1.37 (0.242)
Single	64 (50.0)	64 (50.0)	
Level of Practice			
EMT Advance	19 (46.3)	22 (53.7)	
EMT Basic	91 (43.5)	118 (56.4)	**10.89 (0.004)**
Years of Practice			
Below 5years	56 (45.2)	68 (54.8)	
5-10years	50 (47.6)	55 (52.4)	0.15 (0.927)
Above 10years	10 (4.0)	11 (4.4)	
Geographical Location of	Operation		
District grounds	49 (42.2)	67 (57.8)	
Municipal grounds	59 (50.4)	58 (49.6)	1.57 (0.456)
Other, (highway)	8 (3.2)	9 (3.6)	

Source: Field Survey, (2021)

4.4 Specific Job-Related Stress among Emergency Medical Technicians

4.4.1 Factors and Conditions of Job-Related Stress

In Table 4.6a**,** bad roads (91.2%), musculoskeletal injury of EMT (90.4%), documentation of emergencies (92.0%), delay in handing over (73.6%) and patient assessment and handling (74.4%) were the factors and conditions that lead to job-related stress. However, 76.8% disagree that lack of knowledge was a factor and condition that led to job-related stress.

Table 4.6a Factors and Conditions of Job-Related Stress (Chronic Stress)

Variable	Frequency(N=250)	Percentage (%)
Bad roads (root of transport)		
Disagree	22	8.8
Agree	228	91.2
Musculoskeletal injury of EMTs		
Disagree	24	9.6
Agree	226	90.4
Documentation of emergencies		
Disagree	20	8.0
Agree	230	92.0
Lack of knowledge of equipment		
Disagree	192	76.8
Agree	58	23.2
Delay in handing over the patient		
Disagree	66	26.4
Agree	184	73.6
Patient assessment and handling		
Disagree	64	25.6
Agree	186	74.4

Source: Field Survey, (2021)

Table 4.6b shown below indicates responders' agreement on critical incidents. For the death of an EMT in line of duty (92%), EMT being held hostage (89.6%), medics attacked by armed robbers as embarking on emergency (96.8%), Exposed to infection or life-threatening situations (96 %), death of patients as care is been provided (87.2%), accident with the ambulance (96.8%) and violent at the scene (88.8%).

Table 4.6b Critical Incidents of Job-Related Stress

Variable	Frequency N=250	Percentage (%)
Death of an EMT		
Disagree	20	8.0
Agree	230	92.0
EMT held hostage by patient relatives		
Disagree	26	10.4
Agree	224	89.6
Armed robbers attack		
Disagree	8	3.2
Agree	242	96.8
Exposed to infection		
Disagree	10	4.0
Agree	240	96.0
Death of patients		
Disagree	32	12.8
Agree	218	87.2
Accident with the ambulance		
Disagree	18	7.2
Agree	232	96.8
Violent at the scene (insults and assaults)		
Disagree	28	11.2
Agree	222	88.8

Source: Field Survey, (2021)

4.4.2 Sociodemographic Predictor Variables of Job-Related Stress among EMTs

Table 4.7 below indicates that EMTs above 40 years have 52.2% significantly higher occupational stress compared to the 20-29 age group who are energetic in carrying out

their duty (AOR = 3.83, p = 0.011). The result also shows no significant difference between males and females in terms of occupational stress (AOR = 1.13, p = 0.624) for males compared to females as the reference). The very large COR for Master's degrees seems to be an anomaly, possibly due to a minimal sample size (N=8) as indicated in Table 4.7 resulting in unreliable estimates. Longer working experience does not show a clear trend affecting occupational stress, with those having 3-4 years not being significant (p = 0.062).

Table 4.7 Sociodemographic Predictor Variables of Job-Related Stress

Variable	Job-related stress (n=250)	COR (95% CI)	*p*-value	AOR (95% CI)	*p*-value
Age					
20-29	70 (28.3)	1.00	-	1.00	-
30-39	129 (52.2)	0.96 (0.59-1.54)	0.850	0.76 (0.44-1.32)	0.330
Above 40	48 (19.4)	3.53 (1.48-8.43)	**0.005**	3.83 (1.37-10.73)	**0.011**
Gender					
Male	101 (40.4)	1.02 (0.65-1.61)	0.920	1.13 (0.69-1.85)	0.624
Female	149 (59.6)	1.00	-	1.00	-
Marital Status					
Single	122 (48.8)	0.60 (0.37-0.99)	**0.045**	0.61 (0.35-1.08)	0.088
Married	128 (51.2)	1.00	-	1.00	-

Source: Field Survey, (2021)

4.5 Strategic Measures to Reduce Post-Traumatic Stress Disorder (PTSD)

4.5.1 Strategies to reduce stress

Table 4.8 shown below indicates strategies EMTs adapt to reduce stress. Almost all respondents (94.8%) disagree with smoking or drinking alcohol as a measure to reduce

stress while the rest of the factors; were rescheduling work (84.8%), relaxing after an emergency (89.6%), dialog with a colleague, planning (94.4%), assigned a colleague to work for (80.8%), debriefing with the crew (86.4%), seek counseling from the counsel unit (90.4%), listen to music after an emergency (83.2%) and exercise or playing game after an emergency (91.2%).

Table 4.8 Strategies to Reduce Stress

Variable (Strategies)	Frequency n=25	Percentage (%)
Reschedule of work		
Disagree	38	15.2
Agree	212	84.8
Relaxing at work after an emergency		
Disagree	26	10.4
Agree	224	89.6
Plan for colleagues to work on behalf		
Disagree	18	7.2
Agree	232	92.8
Assigned a colleague		
Disagree	48	19.2
Agree	202	80.8
Drink or smoke after work		
Disagree	237	94.8
Agree	13	5.2
Debriefing with crew after an emergency		
Disagree	34	13.6
Agree	216	86.4
Seek counseling from the counsel unit		
Disagree	24	9.6
Agree	226	90.4

Listen to music after an emergency		
Disagree	42	16.8
Agree	208	83.2
Exercise or play a game after an emergency		
Disagree	22	8.8
Agree	228	91.2

Source: Field Survey, (2021)

4.6 Occupational Stress and Job Satisfaction of Respondents

The results of the chi-square analysis for occupational stress and the job satisfaction level of respondents are presented in Table 4.9 below. There was a statistical difference ($p<0.05$) for occupational stress as against job satisfaction.

Table 4.9 Occupational stress and job satisfaction of respondents

Job stress	**Satisfaction level**		**(χ^2)(p-value)**	**Correlation coefficient**
	Not Satisfied (%)	Satisfied (%)		
Stressed (No)	126 (50.4)	124 (49.6)	18.8	0.274
Stressed (yes)	134 (53.6)	116 (46.4)		

Source: Field Survey, (2021)

4.7 EMTs and Individual Predictor Variables on Job-Related Stress

Table 4.9 below predicator EMTs and predictors is an increase of job-related stress as the number of attacks increases, significant in both crude (COR=0.86, $p<0.001$) and adjusted models (AOR=0.89, $p=0.004$). This could suggest better coping mechanisms developing over time with increased exposure to such events. However, bad roads affect

EMTs performance of 5.95 times in carrying out their duties [AOR=5.95 (CI3.25-10.89), p=<0.001]. robbery attacks as an environmental factor that likely exacerbates stress due to the physical challenges and risks associated, significantly associated with higher job-related stress [AOR=0.89 (*CI*0.82-0.96), p=0.004].

Table 4.10: EMTs and individual predictor variables on job-related stress and safety practices among medical emergency Technicians.

Variable	Stress (N=250) (%)	COR (95% CI)	*p*-value	AOR (95% CI)	*p*-value
Ave. working days					
(π ±SD)	24.62 ±3.23	1.02 (0.96-1.09)	0.435	-	-
Robbery attack	234 (78.2)	0.86 (0.80-0.93)	< **0.0001**	0.89 (0.82-0.96)	**0.004**
Infection	250 (100.0)	1.00 (0.89-1.14)	0.95	-	-
Death of a patient	133 (48.0)	1.40 (0.80-2.18)	0.141	-	-
Road accident	242 (98.2)	0.98 (0.19-5.13)	0.981	-	-
Exposure to blood	241 (97.8)	10.31 (4.04-26.33)	<**0.0001**	2.88 (0.83-9.92)	0.095
Musculoskeletal Injury	250 (100.0)	532751.00 (0.00-inf)	0.998	-	-
Bad roads	244 (88.1)	8.37 (4.99-14.06)	< **0.0001**	5.95 (3.25-10.89)	<**0.001**
Work overtime	193 (69.7)	1.52 (0.96-2.40)	0.071	-	-
Safe work environs	247 (92.8)	3.28 (1.72-6.26)	< **0.0001**	2.53 (1.06-6.02)	**0.036**
Held hostage by the patient's relative	249 (98.5)	1.55 (0.71-3.40)	0.272	-	-

Source: Field Survey, (2021)

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This study aims to find job-related stress and satisfaction levels as the EMTs provide pre-hospital care to the public. A huge number of ambulance personnel experience numerous stressors that usually affect their psychological and physical status, as in line with a study in the United Kingdom (Bernett & Y, 2004). And that EMTs are at high risk of developing PTSD, though they are not exposed to main disasters, ambulance crew endure high daily stress with exposure to human suffering and have to cope with grief and death. The study indicates that EMTs below the age of 40 years constituting 80% of the responders agreed of stressful disorder due to the active provision of pre-hospital care.

5.2 Job Satisfaction Factors among Emergency Medical Technicians

Displeasure EMTs are more likely to face difficulty in caring for patients and providing eminence pre-medical care, as dissatisfaction with the job is consistently linked with 80% of the responders in this study agreeing of stressful disorder due to the active provision of pre-hospital care that decreases EMTs performance (Sharma et al., 2018). The satisfaction of an employee does not depend only on the salary as no one is satisfied, but the condition of the service, the environment, and the respect towards the personnel and the institution makes it comfortable and satisfied to work effectively (Long, 2016). The present study shows that 95.2% of the responders are dissatisfied with their salary, 92.8% of responders have never received any uniform since passing out, not even an accommodation or rent allowance to support the personnel, and that has an effect on their quality of life, and is not far from 119 paramedics in the United Kingdom complain of

how their financial status affect their satisfaction level in carrying their duties (Choi & Yun, 2019).

Respondents were satisfied with their relationships with co-workers and had good relationships with the senior officers with much freedom and control over some medical equipment. with duty schedules, one can call a colleague to work for a limited number of periods just as the Anand district EMS schedules in India (Sharma et al., 2018). This present study reported EMTs with GCE O' LEVEL, SSCE/WASSCE were 61.9% satisfied with their standard of living as against respondents with academic qualification of Bachelor Degree, as senior officers (Advance EMTs) with higher academic qualifications expected to receive more with other incentive (allowances) compared with other colleagues in different countries reported of higher job similarity of the Advance EMTs with higher salaries, ranks and higher internal level of control than the basic EMTs (Flaherty et al., 2020).

5.3 Specific job-related stress among EMTs

In this study, EMTs stated some factors that lead to chronic stress such as insufficient salary, data entering of emergencies into the PIMS, patient assessment and care, delay in handing over patients, bad road network, and critical stressors like accidents with the ambulance, death of a patient under EMT's care, armed robbery attacks and exposed to infectious diseases and even held hostage by patient relatives for refusing to transport pronounced dead patient. According to the findings of this study, 97% of the EMTs agreed that they have gone through these factors that led them to depression, anxiety, insomnia, bad temper, social isolation, and likely committed medical error, and this is in line with the career cast report lists EMTs' services as the 9th most stressful career

(Boudreaux, 2015). Musculoskeletal injuries as a result of lifting patients, carrier bags loaded with equipment, and repetitive movement increase the risk of muscle injuries, and this leads to strain, sprain, and discomfort. The 90.4% physical demand stress of EMTs in this study is higher as compared to Indian EMTs' physical demand stress of 22% (Koval et al., 2020).

Interactions with hospital staff to report the case are sometimes stressful for EMTs, particularly during handovers and patient transfers. Communication breakdowns, conflicting priorities, and lack of support from hospital staff about needy patients worsen stress for EMTs. These findings support the analysis of the reasons for staff turnover among paramedics in South Africa (Iwu, 2013). The process of handling emergency cases, including decision-making, prioritization (triage), and coordination of resources is challenging and stressful for EMTs (Sobuwa & Christopher, 2019). Complex cases, time-sensitive interventions, and the potential for adverse outcomes contribute to the stress experienced by EMTs during case management. Lack of knowledge did not emerge as a significant stressor in this study, it is worth noting that ongoing training (CPDs) and the paramilitary training received at the paramedic and emergency care training school are good enough for EMTs to effectively perform their duties and adapt to evolving healthcare practices (McLay & Mayorga, 2010). Continuous learning opportunities help EMTs feel confident and competent in their roles, reducing stress associated with knowledge gaps.

5.4 Impact of Job-Related Stress on Emergency Medical Technicians' Health

The EMS career demands both physical and psychological alertness. EMTs work long shifts exceeding 12 or 24 hours and perform physically challenging tasks such as moving

patients and lifting and lowering stretcher that leads to musculoskeletal pains in the various parts of the body, including neck, shoulder, and lower back. However, 90.4% of the responders complain of experiencing severe muscle pain and sprain as a result of physical tasks involved in pushing and lifting patients, and these implications physically affect EMTs' health.

This is in line with a study that states that physical health outcomes such as cardiovascular disease and musculoskeletal disorders are linked with job stress (Hasin et al., 2023). A study also affirmed that job stress is associated with psychological problems like anxiety, depression, insomnia, and burnout (Hasin et al., 2023). This moreover, confirms that 89% of responders of this study were emotionally and mentally uncertain due to an armed robber's attack, fatal accidents, a patient dying under EMT's care, and exposure to deadly infectious diseases. These scary incidents increase EMTs' difficulty in falling asleep waking up at night and having nightmares.

A study conducted in 2016 indicates that EMTs face high levels of acute and chronic stress as well as a high rate of mental disorders which increases their risk of suicide (Vigil et al., 2019). However, findings in this study do not go to the extent of EMTs committing suicide due to the debriefing and discussion among the EMTs after critical emergencies and cultural values that caution individuals on such acts.

5.5 Strategic measures to reduce post-traumatic stress disorder (PTSD)

Each individual and the strategies for dealing with the pressure at the workplace. The strategies respondents resorted to were rescheduling work, relaxing after an emergency, dialoguing with colleagues, planning, assigning a colleague, debriefing with the crew,

seeking counseling, listening to music, and being involved in an exercise. EMTs agreed on crew debriefing, dialogue with colleagues, rescheduling of duty, and visits to the mental health unit were the most effective measures to reduce PTSD, with an average percentage of 84%. These findings agree with the study that showed that planning, debriefing on challenges faced in emergencies, and focused and calm emotion were the strategies that helped to reduce stress among EMTs in Sabah (Dahlan et al., 2016).

A review indicated that programs that include the following concepts tend to be the most effective at improving performance goal-setting, positive thinking, situation restructuring, relaxation, focused attention, imagery, and mental rehearsal (Hasin et al., 2023). Keebat in his review on mass casualty incidents watched on screen, found that intellectual statements resulted in positive coping. Specifically, EMTs who have been exposed to statements that encouraged emotional detachment and analytical observation of explicit industrial accidents on videotape (i.e., table saw injury) lowered levels of physiological arousal in subjects and enhanced their recall of events (Khan, 2018).

CHAPTER SIX

RESULT SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents a summary of the major findings of the study which assessed the job-related stress and satisfaction levels as the EMTs provide pre-hospital care to the public. The chapter includes a summary of the research findings, study limitations, conclusions from the results obtained, and recommendations for further studies.

6.2 Summary of the Key Findings

This study of 250 emergency medical technicians (EMTs), primarily female (59.6%) and aged 30-39 (52.2%), examined job satisfaction, sources of stress, and coping strategies. Most respondents (95.2%) were dissatisfied with their salary, with 56.4% expressing dissatisfaction with supervisor support and 51.2% unhappy with working conditions. Additional dissatisfaction was linked to inadequate uniform supply (92.8%), rewards (84.7%), and office accommodation (93.6%). Despite these issues, EMTs reported positive relationships with coworkers (95.2%) and satisfaction with duty schedules (88%), and most agreed there was an adequate supply of consumables (65.6%) and well-equipped ambulances (84.4%).

Job satisfaction was significantly associated with educational qualifications and practice levels ($p < 0.05$). Key stressors identified included poor road conditions (91.2%), musculoskeletal injuries (90.4%), and patient handover delays (73.6%). EMTs also frequently encountered critical incidents such as robberies (96.8%), patient deaths during care (87.2%), and violent situations at emergency scenes (88.8%), which were major contributors to job-related stress.

Older EMTs, particularly those over 40, reported significantly higher stress levels (AOR = 3.83, p = 0.011), although stress levels showed no significant difference between male and female EMTs.

EMTs employed various strategies to manage stress, with most avoiding smoking or drinking (94.8%). Instead, they preferred healthy methods such as relaxing after emergencies (89.6%), discussing experiences with colleagues (94.4%), and seeking counseling (90.4%). Statistical analysis showed a significant relationship between job satisfaction and occupational stress levels ($p < 0.05$), underscoring how work conditions impact EMTs' well-being.

The study also found that EMTs facing more frequent robberies reported increased job stress, both in crude (COR = 0.86, $p < 0.001$) and adjusted models (AOR = 0.89, p = 0.004). Poor road conditions amplified performance challenges, making EMTs nearly six times more likely to experience stress (AOR = 5.95, $p < 0.001$), further highlighting the role of environmental factors in EMTs' stress.

6.3 Study Limitation

One limitation of this study is its reliance on self-reported information, which may introduce recall bias, as participants might selectively remember or report information, leading to potential inaccuracies in the data collected. To mitigate this bias, participants were assured of strict confidentiality and guaranteed anonymity, which may have encouraged more accurate responses.

Additionally, the relatively small sample size of 250 respondents may limit the generalizability of the findings to the broader EMT population. This smaller sample size reduces the accuracy of subgroup analyses, such as those based on age or educational level. It also lowers the statistical power needed to detect significant associations, which could result in the under- or overestimation of job-related stress factors and coping mechanisms.

Despite these limitations, the study's outcomes remain robust. The findings offer valuable insights for policymakers seeking to improve safety services and EMT working conditions.

6.4 Conclusion

This study indicates that EMTs face considerable dissatisfaction with their salaries, work conditions, and support from supervisors, although positive relationships with colleagues and a sense of autonomy in equipment use helped improve satisfaction levels. Thus, certain interpersonal and operational factors bolster job satisfaction, but a lack of financial and logistical support significantly diminishes overall job satisfaction.

The study also identified various sources of job-related stress, with EMTs experiencing high levels of physical, emotional, and operational stress due to factors such as poor road conditions, patient handover delays, musculoskeletal injuries, and exposure to critical incidents like patient deaths and robberies. These stressors reveal the challenging nature of EMT duties, underscoring the need for targeted interventions to address workplace and environmental stressors affecting EMTs.

Furthermore, job-related stress was shown to have significant effects on EMTs' physical and psychological health. Many EMTs reported symptoms of anxiety, depression, insomnia, and musculoskeletal pain linked to the physical demands of the job and the traumatic events they encounter. The high prevalence of these health issues demonstrates the toll that stress takes on EMTs and emphasizes the importance of preventive strategies and mental health support systems to safeguard their well-being.

6.5 Recommendations

6.5.1 Government and Ministry of Health

- ❖ Should review and improve EMT salaries and provide essential benefits like uniform allowances, housing, and rent support to enhance job satisfaction and reduce financial stress among EMTs.
- ❖ Should invest in the maintenance and repair of roads in the Bono and Ahafo regions to ensure safer and faster transportation for emergency responses, thereby reducing stress caused by poor road conditions.
- ❖ Should establish funded mental health programs for EMTs to address chronic stress, PTSD, and mental health challenges associated with their high-stress roles.

6.5.2 Ghana Health Service (GHS) and Ambulance Service

- ➢ Ensure that EMTs receive adequate supervision and managerial support to enhance job satisfaction, with regular check-ins, guidance, and resources from their supervisors.

- Increase the supply of essential items, such as uniforms, consumables, and equipment, and provide ongoing professional development to support EMTs' evolving roles and ensure consistent, high-quality care.
- Ensure ambulances are well-equipped with necessary medical tools and maintain adequate office space for EMTs to improve their work environment and performance.

6.5.3 Regional Directorate

- Provide regular debriefing sessions and counseling resources for EMTs to help manage traumatic experiences encountered on the job.
- Design flexible duty schedules that allow EMTs to recuperate between shifts, reducing burnout and enhancing productivity.
- Improve communication protocols between EMTs and hospital staff to streamline patient handovers and support EMTs in handling critical cases more effectively.

6.5.4 Future Research

- ✓ Conduct studies with larger and more diverse samples to validate findings across different regions and demographics, providing a more comprehensive understanding of EMT stress and satisfaction.
- ✓ Investigate the long-term physical and mental health outcomes of EMTs related to job stress, including musculoskeletal and cardiovascular health.
- ✓ Explore the impact of policy and environmental factors on EMT job stress, including workplace safety, regional differences, and government support.

REFERENCES

Adum-Kyeremeh, K. (2018). Politicization of Chieftaincy in Africa: A Case Study of Bono Kyempim, Ghana. *Nordic Journal of African Studies*, *27*(17), 1.

Afshari, A., Borzou, S. R., Shamsaei, F., Mohammadi, E., & Tapak, L. (2021). Perceived occupational stressors among emergency medical service providers: a qualitative study. *BMC Emergency Medicine*, *21*(1). https://doi.org/10.1186/s12873-021-00430-6

Aklilu, M., Warku, W., Tadele, W., Mulugeta, Y., Usman, H., Alemu, A., Abdela, S., Hailemariam, A., & Birhanu, E. (2020). Assessment of Job Satisfaction Level and Its Associated Factors among Health Workers in Addis Ababa Health Centers: A Cross-Sectional Study. *Advances in Public Health*, *2020*. https://doi.org/10.1155/2020/1085029

Alexander, D. A., & Klein, S. (2001). Ambulance personnel and critical incidents: Impact of accident and emergency work on mental health and emotional well-being. *Primary Care Companion to the Journal of Clinical Psychiatry*, *3*(1), 35–36.

Bashawir, A., Ghani, A., & Subhan, M. (2015). *The Relationship between Stress and Job Satisfaction : An Evidence from Malaysian Peacekeeping Mission The Relationship between Stress and Job Satisfaction : An Evidence from Malaysian Peacekeeping Mission Azman Ismail*. *September*. https://doi.org/10.5901/mjss.2015.v6n4s3p647

Batool, S., & Batool, S. A. (2017). Job Satisfaction Survey (Spector , 1997) and Role Base Performance Scale EMOTIONAL INTELLIGENCE AND JOB COMMITMENT : MEDITATIONAL ROLE OF JOB SATISFACTION AND JOB. *Pakistan Business Review*, *April 2019*, 904–923.

Choi, S., & Yun, S. (2019). *Effects of Job Satisfaction on Quality of Life for 119 Paramedics*. *13*(8), 4315–4328.

Dahlan, M., Malek, H. A., & Baco, B. S. (2016). *The Sources of Occupational Stress and Coping Strategies among Emergency Workers in Sabah , Malaysia Faculty of Psychology and Education*. *6*(6), 155–162.

Donnelly, E. A. (2010). *Florida State University Libraries Occupationally Related Stress Exposures and Stress Reactions in the Emergency Medical Services*.

Flaherty, K. E., Zakariah, A. N., Vescio, V. A., Osei-Ampofo, M., Mahama, M. N., Agongo, V., & Becker, T. K. (2020). The state of emergency medical technician education in Ghana. *African Journal of Emergency Medicine*, *10*(3), 107–110. https://doi.org/10.1016/j.afjem.2020.01.009

Halpern, J., Maunder, R. G., Schwartz, B., & Gurevich, M. (2014). *Downtime after Critical Incidents in Emergency Medical Technicians / Paramedics*. *2014*.

Hasin, H., Johari, Y. C., Jamil, A., Nordin, E., & Hussein, W. S. (2023). The Harmful Impact of Job Stress on Mental and Physical Health. *International Journal of Academic Research in Business and Social Sciences*, *13*(4). https://doi.org/10.6007/ijarbss/v13-i4/16655

Iwu, C. G. (2013). *An Analysis of the Reasons for Staff Turnover amongst Paramedics in South Africa*. *43*(3), 225–235.

Khan, K. (2018). Tabletop Exercise on Mass Casualty Incident Triage, Does it Work? *Health Science Journal*, *12*(03). https://doi.org/10.21767/1791-809x.1000566

Koval, K. W., Lindquist, B., Gennosa, C., Mahadevan, A., Niknam, K., Patil, S., Ramana Rao, G. V., Strehlow, M. C., & Newberry, J. A. (2020). First look at emergency medical technician wellness in India: Application of the Maslach Burnout Inventory in an unstudied population. *PLoS ONE*, *15*(3), 1–14. https://doi.org/10.1371/journal.pone.0229954

Kyereh, D., Darko, B. O., Agbenyega, O., & Opuni-Frimpong, E. (2015). *ANALYSIS OF SMALLHOLDER FORESTS FOR POVERTY ALLEVIATION AND CLIMATE CHANGE MITIGATION IN THE NKORANZA SOUTH DISTRICT OF THE BRONG AHAFO REGION OF GHANA*. *JOGEE*(1), 68–73. www.ikpress.org

Long, C. S. (2016). *Role of Occupational Stress on Job Satisfaction Role of Occupational Stress on Job Satisfaction*. *May*. https://doi.org/10.5901/mjss.2015.v6n2s1p81

Mahama, M. N., Kenu, E., Bandoh, D. A., & Zakariah, A. N. (2018). Emergency response time and pre-hospital trauma survival rate of the national ambulance service, Greater Accra (January - December 2014). *BMC Emergency Medicine*, *18*(1). https://doi.org/10.1186/s12873-018-0184-3

McLay, L. A., & Mayorga, M. E. (2010). Evaluating emergency medical service performance measures. *Health Care Management Science*, *13*(2), 124–136. https://doi.org/10.1007/s10729-009-9115-x

Rao, K. S., & Karumuri, V. (2019). JOB SATISFACTION: A CONCEPTUAL FRAMEWORK. *EPRA International Journal of Multidisciplinary Research (IJMR) Peer Reviewed Journal Peer Reviewed Journal*, *9*. www.eprajournals.com

Sharma, D. B., Shah, U. M., Patel, R., Gupta, V., & Singh, U. S. (2018). Determinants of job satisfaction amongst medical officers of primary health centre in Anand District, Gujarat, India. *Journal of Clinical and Diagnostic Research*, *12*(4), LC13–LC17. https://doi.org/10.7860/JCDR/2018/26735.11430

Singh, M. M., Amiril, M., & Sabbarwal, S. (2019). Role of Job Stress on Job Satisfaction. *International Journal of Management Studies*, *VI*(4), 57. https://doi.org/10.18843/ijms/v6i4/08

Sobuwa, S., & Christopher, L. D. (2019). Emergency care education in south africa: Past, present and future. In *Australasian Journal of Paramedicine* (Vol. 16). Australasian College of Paramedicine. https://doi.org/10.33151/ajp.16.647

Vigil, N. H., Grant, A. R., Perez, O., Blust, R. N., Chikani, V., Vadeboncoeur, T. F., Spaite, D. W., & Bobrow, B. J. (2019). Death by Suicide—The EMS Profession Compared to the General Public. *Prehospital Emergency Care*, *23*(3). https://doi.org/10.1080/10903127.2018.1514090

APPENDICES

APPENDIX 1

QUESTIONNAIRES

DATA COLLECTION TOOL

DESIGNED QUESTIONNAIRE ON ASSESSING JOB SATISFACTION LEVEL AND JOB-RELATED STRESS AMONG EMERGENCY MEDICAL TECHNICIANS OF THE NATIONAL AMBULANCE SERVICE IN THE BONO AND ASHANTI REGIONS OF GHANA.

Region……

District…….……..

Station……

SECTION A:

JOB SATISFACTION

Please read each item in the list carefully and indicate your satisfaction level according to the Likert-type scale of either

D - Dissatisfied,

S - Satisfied,

VS - Very satisfied

Please Tick [√] the box that corresponds to the response appropriate to you

JOB SATISFACTION How do you rate your satisfaction in terms of		D	S	VS
1	Salary /Pay			
2	Supervisor's support			
3	Condition of Working Environment			
4	Relationship with co-workers			
5	Duty schedules			
6	Flexibility to balance life			
7	Educational Qualification			
8	Work-family relationship			

Please Tick [√] the box that corresponds to the response appropriate to you

Strongly disagree -SD Disagree -D Agree - A Strongly Agree -SA

JOB SATISFACTION Monetary Award		Scale of satisfaction				
		SD	D	N	A	SA
1	The basic pay is sufficient to enhance my performance.					
2	My basic pay is fair					
3	Uniforms are supplied to inspire work effectively					
4	Not all equipment in the ambulance function					
5	allowances are assured to all personnel					
6	Promotion is assured after long service					
7	Performance is recognized in a reward form					
8	Promotions are fair and clear					

9	The institution provides accommodation to personnel					
10	Rent allowance is paid to personnel quarterly					
	FACILITIES AND EQUIPMENT					
1	Workplaces have all the needed amenities to carry out tasks					
2	Items (consumables) for work are supplied on time when requested					
3	There is a speedy response to situations due to available equipment					
4	There is enough office space for all workers					
5	There is a well-equipped ambulance for effective emergency response					

SECTION B: JOB RELATED

Please mark [√] the box that corresponds to the response appropriate to you.

Strongly Disagree. -SD, Disagree -D Agree -A Strongly Agreed -SA

JOB-RELATED STRESS						
		SD	D	N	A	SA
1	Access to the community to attend to emergency affects EMTs					
2	Afraid to attend to emergencies at night due to armed robbers					

3	bad road conditions put much pressure on EMTs to provide care to casualties					
4	Wrong direction by the callers and prang calls affects personnel's early response to emergencies					
5	Bystanders and relatives at times become hindrances to patients' care					
6	Work overload due to inadequate personnel					
	EMTS go through chronic stress in	SD	D	N	A	SA
7	Dealing with co-workers' misunderstanding					
8	Too much data entry					
9	Lack of knowledge of equipment in the ambulance					
10	Leaders over-emphasize the negativities (e.g., public complaints)					
11	Dealing with hospital staff's refusal to accept patient					
12	Working at night (emergency responses at midnight)					
13	Risk of being injured on the job					
14	Negative comments from the public					

Please mark [√] the box that corresponds to the response appropriate to you.

Strongly disagree -SD, Disagree -A, Agree -A, Strongly agree -SA

	FELT CRITICAL STRESS…..	SD	D	N	A	SA
1	When a fellow EMT/Paramedic was killed/died in the line of duty					

2	… of being Taken hostage					
3	Threatened with a gun or other weapon					
4	Trapped in a potentially life-threatening situation					
5	Exposed to serious risk of infectious or life-threatening diseases					
6	Made a mistake that led to the serious injury or death of a patient					
7	as the ambulance was in a serious accident					
8	Encountered a child who had been sexually assaulted					
9	Had your life endangered in a large-scale disaster					
10	Responded to an aggressive crowd or riot at the accident scene					

Please mark [√] the box that corresponds to the response appropriate to you.

Strongly disagree - SD, Disagree -D, Agree -A, Strongly agree -SA

MANAGEMENT OF STRESS - HOW DO YOU MANAGE YOUR STRESS?

		SD	D	N	A	SA
1	Reschedule work helps to ease stress					
2	Support and advice-seeking					
4	Keeping myself occupied after the deadly incident					
5	Planning ahead					
6	Delegation of work and responsibility					
7	Drink or smoke often as a means to manage stress					
8	Do debrief after incident/accident to ease stress					
9	You need a counseling section for the service					

SECTION C

BIO DATA OF RESPONDENTS		
1	Age of respondent/EMT	……..
2	Gender of respondent	Male [ ] Female [ ]
3	Highest educational level	SSCE/WASSCE [ ] Diploma [ ] Degree [ ] Post-degree [ ] Other (specify) ……
4	Marital status	Married[ ] Single [ ] Divorced [ ] Separated [ ]
5	Previous Employment	Government Private [ ] NGO [ ] Other (specify……..
6	How long have you been working as an EMT?	
7	At what level are you certified as an EMT	Basic EMT [ ] Intermediate EMT [ ] Advance EMT [ ]
		Basic life support [ ]

8	What emergency conditions do you handle?	Advanced life support [ ] Other (Intermediate)……
What will you recommend for improving the Job satisfaction level of EMTs? ……. . What strategic measures will you suggest to reduce Job-related stress among EMTs in National Ambulance Service...		

Thank you for your time and attention.