

UNIVERSITY OF NAIROBI DIGITAL REPOSITORY

DEPOSIT AGREEMENT

To efficiently administer the University of Nairobi Digital Repository and preserve its contents for long-term use, the University requires certain permissions and warrants from a depositor or copyright owner. By accepting this agreement, a copyright owner still retains copyright to their work and does not give up the right to submit the work to publishers or other repositories. If one is not a copyright owner, they represent that the copyright owner has given them permission to deposit the work.

By accepting this agreement, a depositor/copyright owner grants to the University the non-exclusive right to reproduce, translate and distribute the submission, including the descriptive information (metadata) and abstract, in any format or medium worldwide and royalty free, including, but not limited to, publication over the internet except as provided for by an addendum to this agreement.

By depositing my/our work in the University of Nairobi Digital Repository, I/we agree to the following:

- (i) This submission does not, to the best of my/our knowledge, infringe on anyone's copyright or other intellectual property rights.
- (ii) If the submission contains material for which I/we do not hold copyright and that exceeds fair use, I/we have obtained the unrestricted permission of the copyright owner to grant the University the rights required by this agreement and that such third-party owned material is clearly identified and acknowledged within the text or content of the submission
- (iii) The submitted material does not contain any confidential information, proprietary information of others or export controlled information
- (iv) There are no restrictions or required publication delays on the distribution of the submitted material by the University
- (v) Once the submission is deposited in the repository, it remains there in perpetuity
- (vi) The information I/we provide about the submitted material is accurate
- (vii) That if copyright terms for, or ownership of, the submitted material changes, it is my/our responsibility to notify the University of these changes

I/we understand that the University of Nairobi Digital Repository:

- (i) May make copies of the submitted work available world-wide, in electronic format via any medium for the lifetime of the repository, or as negotiated with the repository administrator, for the purpose of open access
- (ii) May electronically store, translate, copy or re-arrange the submitted works to ensure its future preservation and accessibility within the lifetime of the repository unless notified by the depositor that specific restrictions apply
- (iii) May incorporate metadata or documentation into public access catalogues for the submitted works. A citation/s to the work will always remain visible in the repository during its lifetime
- (iv) Shall not be under any obligation to take legal action on behalf of the depositor or other rights holders in the event of breach of intellectual property rights or any other right in the material deposited
- (v) Shall not be under any obligation to reproduce, transmit, broadcast, or display the submitted works in the same format or software as that in which it was originally created.
- (vi) May share usage statistics giving details of numbers of downloads and other statistics with University of Nairobi staff

While every care will be taken to preserve the submitted work, the University of Nairobi is not liable for loss or damage to the work(s) or associated data while it is stored within the digital repository.

Work(s) to be deposited:

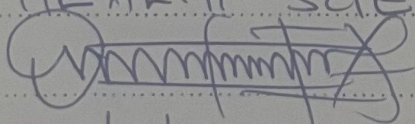
Title: FACTORS ASSOCIATED WITH SICKNESS PRESENTEEISM AMONG HEALTHCARE WORKERS IN KENTATTA NATIONAL HOSPITAL
Author: ORIEMA AGGRET ONYANGO

Depositor's Declaration

I/we ORIEMA AGGRET ONYANGO hereby grant to the University of Nairobi Digital Repository, a non-exclusive license on the terms outlined above.

Name ORIEMA AGGRET ONYANGO

College HEALTH SCIENCES

Sign 

Date 27/11/2023

UNIVERSITY OF NAIROBI

Declaration of Originality Form

This form must be completed and signed for all works submitted to the University for examination.

Name of Student ORIEMA AGGREY ORYANGO

Registration Number H57/7668/2017

College _____

Faculty/School/Institute HEALTH SCIENCES

Department PUBLIC AND GLOBAL HEALTH

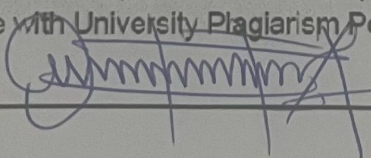
Course Name MASTER OF PUBLIC HEALTH

Title of the work

FACTORS ASSOCIATED WITH SICKNESS PRESENTATION AMONG HEALTHCARE WORKERS IN KENYATA NATIONAL HOSPITAL

DECLARATION

1. I understand what Plagiarism is and I am aware of the University's policy in this regard
2. I declare that this DISSERTATION (Thesis, project, essay, assignment, paper, report, etc) is my original work and has not been submitted elsewhere for examination, award of a degree or publication. Where other people's work, or my own work has been used, this has properly been acknowledged and referenced in accordance with the University of Nairobi's requirements.
3. I have not sought or used the services of any professional agencies to produce this work
4. I have not allowed, and shall not allow anyone to copy my work with the intention of passing it off as his/her own work
5. I understand that any false claim in respect of this work shall result in disciplinary action, in accordance with University Plagiarism Policy.

Signature 

Date 27/11/2023.



TEMPORARY STUDENT ID CARD

ORIEMA AGGREY

Reg. No:H57/7668/2017

ID/PP NO:23517350

MASTER OF PUBLIC HEALTH

FACULTY OF HEALTH SCIENCES

Holder's Sign

Faculty Registrar

This ID/Card is valid up to 16-FEB-2024

ISO 9001:2008 Certified

Issued : 25-SEP-2023 Expires : 16-FEB-2024
H57/7668/2017



9 7 1 2 0 0 2 7

This card is the property of the University of Nairobi and should be
surrendered on request or expiry.





UNIVERSITY OF NAIROBI

**FACTORS ASSOCIATED WITH SICKNESS PRESENTATION AMONG
HEALTHCARE WORKERS IN KENYATTA NATIONAL HOSPITAL, KENYA**

ORHEMA AGGREY ONYANGO

H57/7668/2017

E-MAIL: aggreyoriema@gmail.com

**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF PUBLIC AND
GLOBAL HEALTH IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE AWARD OF THE DEGREE OF MASTER OF PUBLIC HEALTH OF THE
UNIVERSITY OF NAIROBI**

@November 2023

DECLARATION OF ORIGINALITY FORM

Name of student: Oriema Aggrey Onyango

Registration Number: H57/7668/2017

Faculty: Health Sciences

Department: Public and Global Health

Course Name: Master of Public Health

Title of the work: Factors associated with sickness presenteeism among healthcare workers at Kenyatta National Hospital, Kenya.

DECLARATION

1. I understand what plagiarism is and I am aware of the university's policy in this regard.
2. I declare that this thesis is my original work and has not been submitted elsewhere for examination, award of degree or publication. Where other people's work or my own work have been used, they have been accordingly acknowledged and referenced in conformance with the laid down requirements of the University of Nairobi.
3. I have not sought or used the services of any professional agencies to produce this work.
4. I have not allowed and shall not allow anyone to copy my work with the intention of passing it off as his/her own work.
5. I understand that any false claim in respect of this work shall result in disciplinary action, in accordance with the university's policy on plagiarism.

Signature  Date 27/11/2023

SUPERVISORS' APPROVAL

SUPERVISORS' APPROVAL

This thesis has been submitted to the university with our approval University supervisors:

Signature:  _____ Date: 27/11/2023

Dr. George N. Agot, Ph.D.

Lecturer of Health Economics, Health Policy and Health Systems Management

Department of Public and Global Health,

University of Nairobi

Signature:  _____ Date: 27/11/2023

Dr. Rose O. Opiyo, Ph.D.,

Chairperson, Department of Public and Global Health,

University of Nairobi

DEDICATION

I dedicate this research work to my family especially to my spouse Susan, children; Audrey Wendo, Adrian Mich, Andy Bach, and to my mum Yunia.

ACKNOWLEDGEMENTS

Many appreciations go to all persons and entities who provided technical and financial support. First and foremost, I extend my appreciation to my spouse Susan Oriema for her unwavering support during this study. Her understanding during the study period enabled successful completion of the study. To our children Audrey, Adrian and Andy, I similarly extend utmost gratefulness for their indulgence and patience during the period of study.

Special recognition also goes to my research supervisors led by Dr. George N. Agot. Recognition equally extends to Prof. Joseph Wang'ombe, Prof. Joyce Olenja and Dr. Rose Opiyo for their technical and administrative guidance and support. The critique and positive assessment guided in the completion of a quality research work. In addition, I extend my sincere admiration to HORN Project at the University of Liverpool and especially to the Principal Investigator on One Health Project Prof. Dismas Ongore for the research funding that supported data collection and analysis. I also sincerely extend my gratitude Dr. David Omondi Okeyo, Ph.D., MPH for his technical and moral support.

Further, I extend my gratitude to the Public Health Officers and Technicians Council, Kenya whose management and staff provided an enabling environment throughout the entire study.

Further, to the Board, management, and staff of KNH, I will forever be grateful to you for the opportunity to conduct the study in the health facility and to participate in this important study.

To the research team members including Whiton, Adelaide, Van-Khalid, Mike Rajwayi, and Racheal, I remain grateful for the technical support that they provided to enable completion of this research work.

Finally, special thanks extend to any persons and entities who contributed in one way or the other towards the success of this study. May God bless you.

TABLE OF CONTENTS

DECLARATION OF ORIGINALITY FORM	II
SUPERVISORS' APPROVAL.....	III
DEDICATION	IV
ACKNOWLEDGEMENTS.....	V
LIST OF TABLES	VIII
LIST OF FIGURES	IX
LIST OF ABBREVIATIONS/ACRONYMS.....	X
DEFINITION OF OPERATIONAL TERMS	XI
ABSTRACT.....	XII
CHAPTER ONE: INTRODUCTION.....	1
1.1 Chapter introduction	1
1.2 Background information	1
1.3 Statement of the problem	2
1.4 Justification of the study.....	3
1.5 Research Objectives.....	3
1.5.1 Broad Objective	3
1.5.2 Specific Objectives	3
1.5.3 Research Questions.....	4
CHAPTER TWO: LITERATURE REVIEW	5
2.1 Chapter introduction	5
2.2 Sickness presenteeism among healthcare workers	5
2.3 Sociodemographic factors and sickness presenteeism.....	6
2.4 Body Mass Index and sickness presenteeism	7
2.5 Lifestyle factors and sickness presenteeism	8
2.6 Medical Conditions and sickness Presenteeism.....	9
2.7 Theoretical framework.....	10
CHAPTER THREE: METHODOLOGY	13
3.1 Chapter introduction	13
3.2 Study Area.....	13
3.3 Study Design.....	13
3.4 Study Population.....	13
3.5 Eligibility Criteria	13
3.5.1 Inclusion Criteria	13
3.5.2 Exclusion Criteria	13
3.6 Sample size determination	14

3.7 Sample size and sampling procedure	15
3.8 Definition and measurement of variables	15
3.9 Data Collection	18
3.9.1 Data Collection Tool	18
3.9.2 Data Quality Control.....	18
3.10 Study Variables	19
3.10.1 Dependent Variable	19
3.10.2 Independent Variables	19
3.11 Data Processing and analysis	19
3.12 Minimization of errors and biases.....	20
3.13 Ethical approval, authorizations and considerations.....	20
3.14 Study Limitations.....	20
3.15 Further Research	20
CHAPTER FOUR: RESULTS.....	21
4.1 Chapter introduction:	21
4. 2 Descriptive Analyses.....	21
4.2.1 Socio-demographic characteristics	21
4.2.2 Body Mass Index (BMI)	23
4.2.3 Lifestyle factors among healthcare workers	23
4.2.4 Medical Conditions associated with sickness presenteeism	23
4.2.5 Multiple binomial logistic regression of factors associated with sickness presenteeism.....	24
CHAPTER FIVE: DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS	27
5.1 Chapter introduction	27
5.2 Discussions	27
5.3 Conclusion.....	30
5.4 Recommendations.....	30
REFERENCES	32
APPENDICES	42
Appendix 1: CONSENTING EXPLANATION FORM	42
Appendix 2: CONSENTING FORM.....	44
Appendix 3: INTERVIEWER-ADMINISTERED QUESTIONNAIRE	45
Appendix 4: ETHICAL REVIEW AND APPROVAL DOCUMENTS.....	50
Appendix 5: SIMILARITY INDEX REPORT	52

LIST OF TABLES

Table 1: Determination of proportional final sample size by cadre of respondents	15
Table 2: Variable definition and measurement.....	15
Table 3 Descriptive analysis of the study participants (N= 343).....	22
Table 4: Logistic regression analysis of factors associated with sickness presenteeism	24

LIST OF FIGURES

2.8 Figure 1: Conceptual framework of factors associated with sickness Presenteeism 11

LIST OF ABBREVIATIONS/ACRONYMS

BMI	Body Mass Index
CI	Confidence Interval
ERC	Ethics and Review Committee
HCW	Healthcare Workers
HND	Higher National Diploma
KNH	Kenyatta National Hospital
KUTRRH	Kenyatta University Teaching Referral and Research Hospital
MSDs	Musculoskeletal Disorders
NACOSTI	National Commission for Science, Technology and Innovation
ODK	Open Data Kit
SP	Sickness Presenteeism
WPAI:GH	Work Productivity Activity Impairment: General Health

DEFINITION OF OPERATIONAL TERMS

Body Mass Index – is the degree of an individual’s nutritional status that is usually obtained by dividing one’s body weight (kg) by the square of their height (m²) (World Health Organization, 2006).

Health – is a state of complete physical, mental and social well-being and not merely the absence of a disease or infirmity (World Health Organization, 2021).

Healthcare Worker – is a health professional who has acquired relevant technical training, and registered by professional regulatory body (Health Act No. 21 of 2017; Laws of Kenya, 2017).

Sickness presenteeism – used interchangeably with ‘sickness presence’, ‘sick at work’ or “ill at work” and refers to reduced-on-the-job effectiveness among healthcare workers from illness that would otherwise require rest or sick leave away from work place (Aronsson & Gustafsson, 2005).

Work Productivity – is the output per unit of input among healthcare workers involved in service delivery (Beaton et al., 2009).

ABSTRACT

Background: Sickness presenteeism is the state of reporting to workplace in spite of ill-health thus resulting in reduced on-the-job-effectiveness and work productivity impairment. This study intended to establish the factors associated with sickness presenteeism among healthcare workers at Kenyatta National Hospital in Kenya.

Method: The study employed analytical cross-sectional study design. Data were collected from a sample of 373 participants using interviewer-administered questionnaires in the month of April to June 2021. Data were entered into Excel spreadsheet, cleaned, coded and transferred to STATA version 11.2 for descriptive and inferential analyses. Data were analysed and presented in frequencies tables. Multivariable logistic regression analyses were conducted and results summarized in tables.

Results: The mean age of respondents was 41.15 years (41.15 ± 8.854) and mean body mass index (BMI) was 28.8 ± 4.3 . Respondents who experienced sickness presenteeism were 8.5% of study participants and one in every ten respondents experienced sickness presence either in the form of extreme movement limitation or moderate movement limitation (89.7%) at workplace. Multiple logistic regression analyses were conducted to determine if sociodemographic factors, body mass index, lifestyle factors and medical factors had any significant effect as potential predictors of sickness presence among healthcare workers. The results of the analyses showed that, among all factors considered in the study, respondents' age [OR: 13.7, 95% CI (1.04 - 180.2) $P < 0.046$] and medical conditions such as hypertension (OR=1.1226; $p = 0.049$; CI = 1.04 – 1.43), type II diabetes (OR=1.402; $p = 0.05$; CI = 1.15 – 1.74) and heart disease (OR=1.506; $p = 0.05$; CI = 1.11 – 2.03) were the only factors that were significantly associated with sickness presenteeism among respondents. However, medical conditions including calcaneous spur, disc dehydration and certain types of cancer were found to be not significantly associated with sickness presence among respondents.

Conclusion and Recommendations:

Based on the results, healthcare managers and policy makers should introduce health education and promotion programmes at work places that promote early detection of medical conditions associated with sickness presenteeism including health screening. Further, formulation and enforcement of administrative policies on comprehensive provision of medical care, retention of adequate staff, self-reporting and change of lifestyle to prevent and control sickness presence should be pursued by key policy makers. Further studies were recommended across several health facilities and use of administrative data to measure sickness presence among healthcare workers.

CHAPTER ONE: INTRODUCTION

1.1 Chapter introduction

Chapter one provides a background on sickness presenteeism and the potential factors that influence sickness presenteeism among healthcare workers. The chapter also highlights the problem statement, research questions, study objectives and justification of the study.

1.2 Background information

Sickness presenteeism which is also known as sickness presence, ill-presence or sick attendance is the state of reporting to work despite sickness or condition which requires rest or even absence from the workplace thus impairing work productivity (Aronsson & Gustafsson, 2005; Vingård, Alexanderson, & Norlund, 2004). The impact of sickness presenteeism among healthcare workers is believed to even outweigh those of sickness absenteeism due to its negative effects at workplace such as reduced productive time, increased chance of medical errors and failure to achieve work expectations (Hemp, 2004; Schultz & Edington, 2007).

Globally, the burden of sickness presenteeism has increased over the last decade (Johns, 2010). Health sector has not been spared the burden either as it continues to experience work productivity losses and higher costs that even exceed the burden of sickness absenteeism (Cooper & Dewe, 2008). Even though researchers have attempted to determine various factors associated with sickness presence which have been grouped into organizational, work-related or person-related factors, studies have oftentimes been inclined to utilization of self-assessed data to determine its predictors (Bockerman & Laukkanen, 2010; Caverley, Barton Cunningham, & MacGregor, 2007; Elstad & Vabø, 2008; Leineweber, Westerlund, Hagberg, Svedberg, & Alexanderson, 2012). Further, while numerous studies have attempted to investigate the effect of sociodemographic factors, body mass index, lifestyle factors and medical conditions on sickness presenteeism among healthcare workers, very scanty data are available on the actual estimates of its economic impact and its outcome on the quality of healthcare in developing countries (Mdziniso, 2016; Mekonnen, Tefera, & Melsew, 2018; Justice Mensah, 2023; Nwosu, Ossai, Onwuasoigwe, Ezeigweneme, & Okpamen, 2021; Rasmussen, Sweeny, & Sheehan, 2015) which underscores public health importance of this study to the health sector, country and to the region at large.

1.3 Statement of the problem

Every health organization copes with undesirable consequences of sickness presenteeism among its workforce such as poor treatment outcomes, low morale and high staff turnover (De Beer, 2014). Across occupations, prolonged sickness at work leads to disability at a later stage of life (Bergström et al., 2009; Dobson, Schnall, Roskam, & Landsbergis, 2019; Gustafsson, Bergström, Marklund, Aboagye, & Leineweber, 2019) as working while sick is a risk factor for adverse health consequences such as burnout, depression, and cardiovascular events (Kotseva et al., 2019; Pei, Lin, Li, Zhu, & Xi, 2020; Toyoshima et al., 2020). In the health sector, sickness presenteeism is known to aggravate existing health conditions among staffs as it limits the opportunity to seek medical attention and the chance to take a break from work thus prolonged period of recovery among healthcare workers (Aronsson & Gustafsson, 2005; Giæver, Lohmann-Lafrenz, & Løvseth, 2016). Moreover, sickness presenteeism among healthcare staff causes undesirable treatment outcomes for patients such as poor quality of care, medication errors, higher patient mortality and general productive losses (Brborović, Daka, Dakaj, & Brborović, 2017; Letvak, Ruhm, & Gupta, 2012; Michelle Freeling, Jessica G Rainbow, 2020). A study conducted among 14 countries to establish prevalence of sickness presenteeism found that the global prevalence of sickness presenteeism among healthcare workers was 49.2% (Min, Kang, & Park, 2022). The prevalence of sickness presenteeism among healthcare workers at a health facility in Ethiopia was 52.6% showing the rising burden in developing countries in Africa (Mekonnen et al., 2018). In Kenya, the World Bank estimated the economic burden of sickness presenteeism at Kenya shillings 732.2 billion by year 2020. (Julia Mensah, Korir, Nugent, & Hutchinson, 2020). However, the consequences of sickness presenteeism among healthcare workers goes beyond the economic burden as it's a source of risk to patient safety, disease transmission and outbreaks (Edwards, Tomba, & De Blasio, 2016; Pereira, Querido, Bieri, Verloo, & Laranjeira, 2021; Vos, 2018). Available data on the impact of presenteeism and absenteeism in Kenya show that their combined economic burden as a percentage of Gross Domestic Product was 4.4% by 2015 (Rasmussen, Sweeny, & Sheehan, 2016). In Kenya, the economic burden of sickness presence arising from mental illnesses was estimated to account for 30% of total cost of healthcare spending according to National guidelines on workplace mental wellness 2023 (Ministry of Health Kenya, 2023). However, no studies have been conducted in Kenya on sickness presence among healthcare workers thus data on factors associated with sickness presence and its impact on the quality of healthcare remain unknown which calls for an urgent intervention to improve its understanding beyond just lost productivity at organizational and national levels.

1.4 Justification of the study

Understanding the predictors of sickness presenteeism among healthcare workers is essential in addressing its impact. Previous studies on the factors associated with sickness presenteeism across various occupations have shown mixed results. While studies have been conducted on sickness presenteeism among general populations in Sub-Saharan Africa, very few studies have been conducted on factors associated with sickness presenteeism among healthcare workers and its influence on work productivity, patient safety and quality of care thereby limiting knowledge on how to handle its impact. Further, few studies conducted on sickness presenteeism among healthcare workers have frequently just relied upon self-reported data on critical factors such as body mass index and the extent of limitation at work place. Moreover, where such data have been measured sources among study participants, the study populations have been limited thereby confining generalization of the findings. Given that no study has previously been conducted in Kenya on sickness presence among healthcare workers, the study was therefore conducted in one of the busiest level-six referral hospitals in East and Central Africa and thus provides reliable findings on factors associated with sickness presence among healthcare workers to guide inferences and interventions by administrators and policy makers.

1.5 Research Objectives

1.5.1 Broad Objective

To determine factors associated with sickness presenteeism among healthcare workers at Kenyatta National Hospital, Kenya

1.5.2 Specific Objectives

- I. To determine the relationship between sociodemographic factors and sickness presenteeism
- II. To establish association between Body Mass Index and sickness presenteeism
- III. To investigate relationship between lifestyle factors and sickness presenteeism
- IV. To examine association between medical conditions and sickness presenteeism

1.5.3 Research Questions

The study investigated research questions under the corresponding specific objectives below:

1. To determine relationship between sociodemographic factors and sickness presenteeism.
 - a) What are the sociodemographic characteristics of healthcare workers based in Kenyatta National Hospital?
 - b) What is the actual influence of age, sex, marital status, income, education and cadre on sickness presenteeism among healthcare workers?
2. To establish association between Body Mass Index and sickness presenteeism.
 - a) What is proportion of healthcare workers in Kenyatta National Hospital who are categorized as normal weight, overweight and obese?
 - b) Does overweight and obesity expose healthcare workers to sickness presenteeism and to what extent?
3. To investigate relationship between lifestyle factors and sickness presenteeism
 - a) Do lifestyle factors such as alcohol consumption, smoking and physical activity among healthcare workers influence sickness presence?
 - b) Is there a link between lifestyle factors such as alcohol consumption, smoking and physical activity and sickness presenteeism among healthcare workers?
4. To examine association between medical conditions and sickness presenteeism
 - a) What are the existing medical conditions among healthcare workers that are associated with sickness presenteeism?
 - b) What is the relationship between medical conditions with sickness presenteeism and how strong is the relationship?

CHAPTER TWO: LITERATURE REVIEW

2.1 Chapter introduction

This chapter delivers a synopsis of the empirical literature on sickness presenteeism among healthcare workers as well as the theoretical and conceptual frameworks adopted in the study.

2.2 Sickness presenteeism among healthcare workers

Sickness presence is a condition which occurs when workers choose to go to work while sick when they actually require rest or treatment hence their inability to fully perform at work (Johns, 2010; Widera, Chang, & Chen, 2010). While several employers are conscious of sickness absenteeism and the resulting burden arising from its direct and indirect costs, there is now a growing proof that sickness presence leads to significant economic costs that may even exceed sickness absenteeism thus causing loss of productive time, reduced productivity and increased medical errors among employees who go to work while sick (Bramley, Lerner, & Sarnes, n.d.; Schultz, Chen, & Edington, 2009; Stewart, Ricci, Chee, Morganstein, & Lipton, 2003; Stewart, Ricci, Chee, Hahn, & Morganstein, 2003).

Among healthcare workers, sickness presenteeism causes numerous adverse effects to both workers and organizations in terms of work productivity loss, compromised quality of health service delivery and low morale at work (De Beer, 2014; Sanderson K, 2013). Even though there is proof that sickness presenteeism is increasing among all populations in general, healthcare workers bear a disproportionate burden from identifiable risk factors since their job is more demanding, highly specialized, involves long working hours which causes higher risk of stress and burn-out (Demerouti, Le Blanc, Bakker, Schaufeli, & Hox, 2009; Johns, 2010). The disproportionate burden is mostly borne by clinical staff such as doctors, nurses, clinical officers, medical laboratory staffs and nutritionists among other healthcare workers whose scopes of work include first line care and treatment (Sanderson K, 2013). Moreover, there is evidence that healthcare workers oftentimes work while ill due to higher workload, difficulty in obtaining sick leave, unsupportive supervisors or colleagues and the perception that one's work cannot be delegated due to difficulty in staff replicability (Edwards et al., 2016; Mekonnen et al., 2018; Ondicho, Omondi, & Onyango, 2016). Sickness presence has also been shown to be one of the leading causes of medical errors among patients (Homrich, Dantas-Filho, Martins, & Marcon, 2020) even though its actual consequences to the future of health

service delivery remains unknown thus a potential threat to public health and patient safety (Garrido et al., 2009; Munir, Yarker, & Haslam, 2008; Yaqoob & Elhisadi, 2013).

In Kenya for instance, while several studies have been conducted on the impact of sickness absenteeism among healthcare workers (Belita, Mbindyo, & English, 2013; Ngeno, W.K; Muathe, 2014; Tumlinson, Gichane, Curtis, & Lemasters, 2019), evidence on the actual effect of sickness presence among healthcare workers remains unavailable arising from the fact that very few studies have been conducted on sickness presenteeism among healthcare workers (Al Nuhait et al., 2017; Ngarachu, 2018). Regrettably, results from the few studies reveal both direct and indirect consequences such as increased spread of communicable diseases causing potential risks of disease transmission to both patients and colleagues of healthcare workers who go to work while sick (Aronsson & Gustafsson, 2005; Edwards et al., 2016; Prater & Smith, 2011).

To adequately explain sickness presenteeism, different factors have been explored in this study including sociodemographic factors such as age, sex, education and profession which have all been potentially linked to sickness presence among healthcare workers (Aronsson & Gustafsson, 2005; Jeon et al., 2014; Martinez & Ferreira, 2012). Based on literature from other studies (d'Errico et al., 2013; Yıldız, Yıldız, Zehir, & Aykaç, 2015), body mass index, lifestyle factors such as physical inactivity, alcohol use or smoking and medical conditions including musculoskeletal disorders, diabetes and hypertension among others have all been considered as potential factors of sickness presenteeism among healthcare workers and have all been discussed in detail in this study.

2.3 Sociodemographic factors and sickness presenteeism

Sickness presenteeism is associated with sociodemographic factors including age, sex, education, profession and marital status among other factors (Mekonnen et al., 2018). In terms of age, several studies have found sickness presenteeism to be more prevalent among young to middle-age workers probably due to strict attendance requirement by low-grade staff (Gosselin, Lemyre, & Corneil, 2013). Conversely, other studies have also put forward that senior managers, who are mostly considerably older population, oftentimes report to workplace while ill so as to set good example to junior healthcare workers (Kinman, Clements, & Hart, 2019). Regarding gender parity, several studies have reported higher proportion of sickness presenteeism among female healthcare workers compared to their male counterparts (Aronsson, Gustafsson, & Dallner, 2000a; Martinez & Ferreira, 2012; Miraglia M, 2015; Sendén, Schenck-Gustafsson, & Fridner, 2016). However, other studies such as a study

conducted in Portugal on sickness presence amongst nursing staff reported no gender differences amongst healthcare staff who experienced sickness presenteeism (Martinez & Ferreira, 2012). Moreover, studies have also established the link between level of education and sickness presenteeism as is the case of a study conducted on determinants of sickness presenteeism in Beijing Institute of Technology, China (Yang, Zhu, & Xie, 2016) which found that the consequences of sickness presence on health varied significantly across different educational levels and that staff who had low level of education experienced sickness presenteeism more than their counterparts who had higher levels of education. The role of occupation on sickness presenteeism has also been linked to sickness presenteeism as shown by the results of a study conducted in Sweden (Aronsson et al., 2000a) which revealed that workers whose routine duties involved welfare and teaching had markedly higher risk of sickness presence. Similarly, marital status has also been shown to influence sickness presenteeism even though different studies have reported different results. For instance, a study conducted amongst adults on determinants of sickness presence (Cocker et al., 2011) revealed a significant association between marital status and sickness presenteeism. Conversely, another study on the influence of marital status on sickness presenteeism reported no significant differences by marital status (Sendén et al., 2016).

2.4 Body Mass Index and sickness presenteeism

BMI factors such as underweight, normal weight, obesity and overweight portend a huge loss of productivity at the workplace for the reason that they cause sickness presenteeism among workers (Janssens et al., 2012a). High BMI factors such as overweight and obesity are linked with MSDs including low back pain and other forms of pain in other anatomical sites such as neck/shoulder, upper limbs and lower limbs, hip/knee and ankle/foot which result in sickness presenteeism (Nilsen, Holtermann, & Mork, 2011; Oliveria et al., 2016; Shiri, Karppinen, Leino-Arjas, Solovieva, & Viikari-Juntura, 2010; Viester et al., 2013). Obesity class III (BMI of 35.0 kg/m² or greater), for instance, has been shown to result in adverse effects among employees causing reduced productivity on-the-job (Gates, Succop, Brehm, Gillespie, & Sommers, 2008). Further, obesity-associated factors such as MSDs, depression as well as anxiety disorders have also been found to have negative influence on sickness presence (Aronsson et al., 2000a; Druss, Schlesinger, & Allen, 2001; Sanderson, Tilse, Nicholson, Oldenburg, & Graves, 2007). Similarly, studies have revealed that health conditions that arise from physical inactivity and imbalanced diet such as hypertension and diabetes are also linked

to work productivity impairment especially when employees report to work while sick (Janssens et al., 2012a; Merrill et al., 2012; Schell, Theorell, Nilsson, & Saraste, 2013). In another study conducted among Belgian workers on the correlation between body mass index and sickness presence, body mass index was significantly linked to sickness presence (Janssens et al., 2012b). On the other hand, a study among general practitioners in Australia found that BMI was not associated with sickness presenteeism among health professionals (Winona Pit & Hansen, 2016).

2.5 Lifestyle factors and sickness presenteeism

Physical activity, alcohol consumption and smoking are considered as behavioral determinants of sickness presence according to a study conducted among doctors in Australia (Winona Pit & Hansen, 2016). In another study conducted among older women, alcohol use was correlated with impaired day-to-day activities and movement difficulties (McKechnie & Hill, 2009; Saarni et al., 2007). Other findings have also revealed that alcohol consumption is associated with high proportion of sickness presenteeism as it affects one's capability to accomplish routine duties thus decreases productive time (Aas, Haveraaen, Sagvaag, & Thørrisen, 2017; Fisher, Hoffman, Austin-Lane, & Kao, 2000; Verster, Van Der Maarel, McKinney, Olivier, & De Haan, 2014). In yet another study, alcohol was correlated with high proportion of sickness presenteeism among both young and elderly workers (Kirkham et al., 2015). However, a study conducted among doctors in Australia found that alcohol intake was not related with presenteeism and that the likelihood of sickness presence was greater among doctors who were reportedly engaged in physical activity at least 1 to 3 times a week. The study also found that doctors who reported fatigue at work had higher probability of sickness presenteeism (Winona Pit & Hansen, 2016). However, a study conducted on association between physical activity and working while sick found that there was relationship between physical exercise and sickness presenteeism after adjusting for sociodemographic characteristics (Guertler et al., 2015). In relation to smoking, a study conducted on the proportion of presenteeism among industrial workers found no association between smoking and presenteeism (Silva, Zanatta, & De Lucca, 2017). However, another study on the influence of smoking status on sickness presence reported that smokers missed more days away from work and experienced higher productivity impairment while at work resulting in increased costs to employers (Bunn, Stave, Downs, Alvir, & Dirani, 2006).

2.6 Medical Conditions and sickness Presenteeism

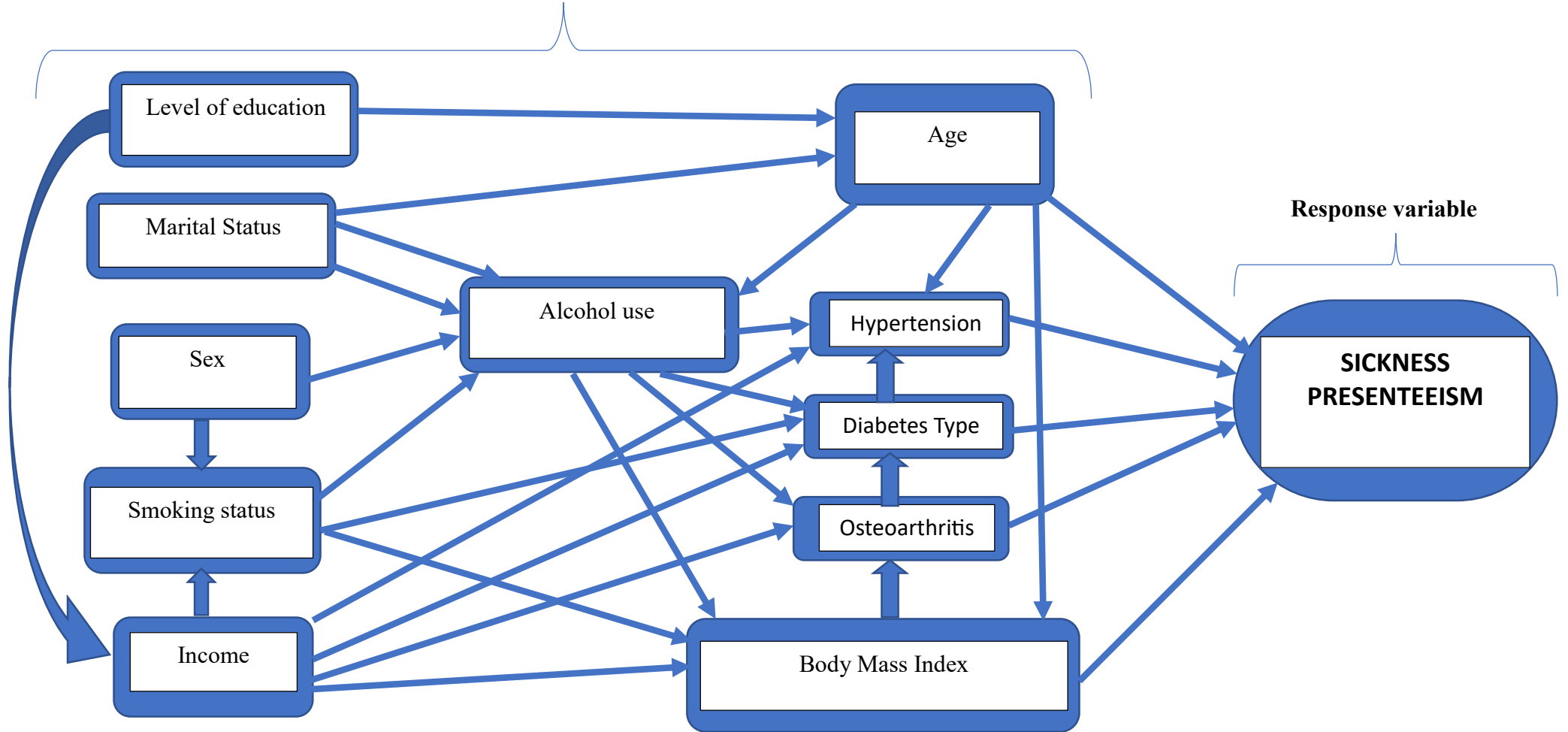
Substitution hypothesis postulates an assumption that the correlation between work-life and sickness presence is mediated by the interactions with physical and mental health (Escudero, Friedlander, Varela, & Abascal, 2008; Johns, 2011; Pohling, Buruck, Jungbauer, & Leiter, 2016). Medical conditions have a substantial influence on work and productivity across all sectors (Burton, Pransky, Conti, Chen, & Edington, 2004). While direct medical costs incurred by various organizations have been accurately tabulated and the cost of absenteeism precisely quantified, the actual cost of presenteeism from medical conditions is yet to be fully defined and operationalized due to its difficulty in measurement (Aronsson et al., 2000a). Research has indicated that there is a connection between sickness presenteeism and medical conditions that limit body movement such as musculoskeletal disorders (osteoarthritis, low back pain and others), hypertension, diabetes type II, migraine and other significant conditions. (Campo & Darragh, 2012; d'Errico et al., 2013; Martinez & Ferreira, 2012). A study performed amongst doctors in New Zealand Hospital, for instance, reported that about 47.8% of the doctors in the health facility had experienced sickness presenteeism from health-related conditions (Bracewell LM, 2019). A separate study to investigate determinants of sickness presence amongst healthcare workers in Ethiopia revealed that musculoskeletal disorders (29.4%) were the main cause of sickness presenteeism among healthcare workers followed by hypertension (8.1%) and diabetes (6.1%) (Mekonnen et al., 2018). Another study conducted in Japan among medical workers and related welfare occupations found that musculoskeletal disorders and mental illness were the most common health conditions causing sickness presenteeism and was thus a huge burden to the economy (Yoshimoto, Oka, Fujii, Nagata, & Matsudaira, 2020). In yet another study on the burden of working while sick; colds and flu (59%) accounted for health conditions affecting largest number of staff followed by stress/anxiety/depression (21%), musculoskeletal disorders (20%) such as low back pain (31%), upper back, neck and shoulder pain (20%), migraine (20%), and other health conditions including gastrointestinal (17%) and allergies (16%) (Whysall, Bowden, & Hewitt, 2018). Finally, a study conducted to determine the role of mental and physical health in mediating sickness presenteeism revealed that work-life balance was key in reducing the proportion of sickness presenteeism among staffs (Pohling et al., 2016).

2.7 Theoretical framework

This study used illness flexibility model (Johansson & Lundberg, 2009) to describe sickness presenteeism among healthcare workers. The model comprises of two components namely; adjustment latitude and attendance requirements. Adjustment latitude was employed to review opportunities that healthcare workers devise to report to work while sick. Healthcare workers may choose tasks to perform, reduce the working hours in a day or just slow down service delivery due to ill-health. Adjustment latitude was thus used to determine the decision-making power that a healthcare worker may use to fit in workplace while sick despite the consequences arising from impaired work productivity. The decision authority was thus explored in the model to explain how potential factors come to play to influence sickness presenteeism among healthcare workers. The associated factors are influenced by sociodemographic factors such as employees' age, variation by sex, level of education, profession, or lifestyle factors including smoking status, alcohol consumption and physical activity. The decision-making power used in the framework also include medical conditions that predict sickness presence such as musculoskeletal disorders, hypertension, migraine, low back pain and type II diabetes that may expose healthcare workers to sickness presenteeism in their pursuit to maintain sufficient ability to work. In regard to attendance requirements, the framework looks at adverse consequences that compel healthcare workers to be present at workplace while sick such as anxiety of job loss, lack of replacement to cover for the absent healthcare worker, huge workload that makes it difficult for other staffs to step up in case a colleague is absent and the demanding responsibilities that make it challenging to delegate tasks. The framework therefore aids in explaining the effect of the factors that predict sickness presenteeism among healthcare workers. However, while the component of attendance requirement extends beyond the scope of this study, it was used to explain sickness presenteeism and its interaction that may cause undesirable outcomes to healthcare workers and healthcare organizations thus resulting in loss of man hours and compromised quality of service delivery (De Beer, 2014; Sanderson K, 2013). The above models explain a potential relationship captured in the conceptual framework in **figure 1** below.

2.8 Figure 1: Conceptual framework of factors associated with sickness Presenteeism

Predictors of sickness presenteeism



Source: Author's construct

The conceptual framework shown in **Figure 1** was designed to demonstrate predictor-response relationship hence the linkage between sickness presenteeism and socio-demographic factors, Body Mass Index (BMI), lifestyle factors and medical conditions among healthcare workers. In the context, sickness presenteeism may be influenced by BMI which is measured in three categories comprising of normal weight, overweight and obesity through a proximate link accountability. However, the actual influence of BMI can only be isolated when the effect of other factors in the model are considered and controlled for. The conceptual framework further demonstrates the potential competitiveness of the two important covariates of sickness presence among study participants; the sociodemographic factors and lifestyle factors. In the framework, sociodemographic factors such as age and sex, level of education, income, marital status and occupation may also influence sickness presenteeism. Similarly, lifestyle factors such as physical activity, smoking status and alcohol use among healthcare workers may similarly affect sickness presenteeism. The conceptual framework therefore tested this proposition to probably isolate the most important predictors of sickness presenteeism. In the framework, sociodemographic factors, BMI, lifestyle factors and medical conditions are considered as covariates in the multivariable logistic regression model.

CHAPTER THREE: METHODOLOGY

3.1 Chapter introduction

This chapter contains study area, study design, study population, and sampling techniques. The chapter also provides for procedures of testing validity of the research tools, definition and measurement of variables as well as data analysis methods applied in the study.

3.2 Study Area

The study was conducted at Kenyatta National Hospital (KNH), Nairobi - Kenya. KNH sits on approximately 45.7 acres (18.5 Ha) in Upper Hill area of Nairobi City County and is situated approximately 3.5 kilometers to the West of Nairobi Central Business District. Kenyatta National Hospital was purposively selected due to its significance as the oldest and largest Teaching, Referral and Research Public Hospital in East and Central Africa region. Data Collection was conducted between April to June 2021 from a total population of 2,797 healthcare workers out of which representative samples of doctors (373), nurses (2,133) clinical officers (91) medical laboratory officers (147) and nutritionists (53) were obtained.

3.3 Study Design

Analytical cross-sectional study design was applied in the study.

3.4 Study Population

Healthcare workers who were based in clinical areas namely doctors, nurses, clinical officers, medical laboratory officers and nutritionists at Kenyatta National Hospital, Kenya.

3.5 Eligibility Criteria

3.5.1 Inclusion Criteria

All clinical healthcare workers aged between 18 to 59 years who had worked for at least one year prior to the study. A total of 343 respondents (92%) out of 373 sampled healthcare workers consented to the study while 10 respondents (2.7%) declined consent.

3.5.2 Exclusion Criteria

Administrative and support staffs were exempted from the study. Clinical staffs on leave and those absent during the period were similarly excluded from the study.

3.6 Sample size determination

The sample size was obtained using Cochran's formula (Cochran, 1977):

$$\text{As } n = \frac{Z^2 Pq}{d^2}$$

Where:

Z – was the standard deviate for the set confidence level of 1.96.

p – The population's proportion of obesity and overweight

q – 1-p

d – Desired precision (standard error of 0.05)

n_0 – Desired sample size for a target population >10,000

Hence

$$n_0 = \frac{1.96^2 \times 0.5 (1- 0.5)}{0.05^2}$$

$$n_0 = 385$$

Since the population of healthcare workers in KNH was < 10,000, the formula was adjusted to:

$$n_f = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where:

n_f – was the sample size desired for a study population < 10,000.

n_0 – was the sample size desired for a study population > 10,000.

N – was the estimate of the actual study population targeted.

$$n = \frac{385}{1 + \frac{(385 - 1)}{2797}}$$

$$n = 339$$

An allowance of 10% was considered for non-response thus the final sample was:

$$n = 339 + (0.1 \times 339)$$

$$n = 373 \text{ healthcare workers}$$

3.7 Sample size and sampling procedure

Sampling frame of 2,797 healthcare workers was stratified by cadre using a sampling fraction based on the cadre's population size as shown in **table 1**. Stratification helped to identify the sample size per cadre after which simple random sampling method was applied to select the final sample size. The final sample size by cadre was calculated as shown in **Table 1** below.

Table 1: Determination of proportional final sample size by cadre of respondents

Cadre of HCW	Doctors	Nurses	Clinical Officers	Medical Laboratory Officers	Nutritionists	Total
Population size (N _h)	373	2,133	91	147	53	2,797
Sampling Fraction (N _h /N)	0.13336	0.7626	0.033	0.053	0.019	1.00
Final sample size by cadre (n_h)	50	284	12	20	7	373

3.8 Definition and measurement of variables

The dependent variable was described as sickness presenteeism which was recorded as limited movement experienced by respondents while at work, measured in Likert scale of 1-10 and categorized as moderate limitation (>5) or extreme limitation (≥ 5). The outcome variable and predictor variables were assessed as shown in **table 2**.

Table 2: Variable definition and measurement

Variable type	Method of assessment	Source of literature
Sickness presenteeism (Nominal)	Sickness presenteeism (sickness presence) was the dependent variable. To measure sickness presenteeism; firstly, presence of medical conditions among healthcare workers was assessed by determining the number of days	Sickness presenteeism was measured in two ways namely; the act or duration of sickness presenteeism and the significant effect of sickness presenteeism on work

	<p>within the last 7 days before an interview that an individual attended work despite being sick and recorded as ‘yes’ or ‘No’. Secondly, assessment of work limitation as measure of work productivity using a modified Work Productivity Activity Impairment – General Health (WPAI-GH) questionnaire which measured level of work limitation through a ten-point Likert scale and categorized the limitation as either moderate limitation (>5) or extreme limitation (≥ 5).</p>	<p>productivity (Johns, 2010; Ricci & Chee, 2005)</p>
<p>Age (Continuous)</p>	<p>Captured as a continuous variable measured in years (yrs.), categorized into four groups, and labelled as 1 = 20-29 yrs., 2 = 30–39 yrs., 3 = 40-49 yrs., 4 = 50-59 yrs.</p>	<p>Age is associated with sickness presenteeism (Gosselin et al., 2013; Kinman et al., 2019)</p>
<p>Sex (Nominal)</p>	<p>Entered as “male” or “female”</p>	<p>Sex of the respondents is linked with sickness presenteeism among various populations at work place including healthcare workers (Aronsson et al., 2000a; Martinez & Ferreira, 2012; Miraglia M, 2015; Sendén et al., 2016)</p>

Marital status (Nominal)	Captured as nominal variable categorized as 1 = married, 2 = single, 3 = Others ^a	Marital status of respondents is correlated with sickness presenteeism (Cocker et al., 2011; Sendén et al., 2016)
Professional cadre (Nominal)	Entered as nominal variable and labelled as; 1 = Doctor, 2 = Nurse, 3 = Clinical Officer, 4 = Medical laboratory Officer and 5 = Nutritionist	An individual's occupation or profession is known to be a risk factor for sickness presenteeism (Aronsson et al., 2000a)
Level of education (Ordinal)	Recorded as ordinal variable labelled as; 1= PhD/Masters, 2 = Graduate, 3 = HND, 4 = Ordinary Diploma and 5 = Certificate	Level of education is correlated with sickness presenteeism (Yang et al., 2016)
Level of Income (Ordinal)	Captured as an ordinal variable in Kenya shillings and categorized as 1=<50,000, 2= 50,001-100,000 and 3>100,000	Level of income is associated with sickness presenteeism among various populations (Aronsson, Gustafsson, & Dallner, 2000b)
Body mass index (Continuous)	Entered as continuous variable and categorized into 4 classes as; 1=underweight, 2= normal weight, 3= overweight, 4=obesity	BMI factors such as overweight and obesity have been thought to expose individuals to huge loss of work productivity from sickness presenteeism (Gates et al., 2008; Janssens et al., 2012a; Viester et al., 2013).
Alcohol use (Nominal)	Captured as 'Yes' and 'No'	Alcohol use is known to be significantly associated with working while ill (Fisher et al., 2000; McKechnie & Hill, 2009; Verster et al., 2014)

Smoking status (Nominal)	Entered as 'Yes' and 'No'	Smoking among workers could lead to sickness presence (Bunn et al., 2006)
Physical activity (Nominal)	Captured as 'Yes' and 'No'	Physical activity has an influence on sickness presence (Winona Pit & Hansen, 2016)
Medical conditions (Nominal)	Entered as 'Yes' and 'No' and labelled as 1=osteoarthritis, 2=hypertension, 3= diabetes type II, 4 = back pain, 5 = others ^b	Medical conditions are associated with reporting to work while sick. (Burton et al., 2004)

HND-Higher National Diploma; Others^a - separated, widowed, divorced; Others^b – heart disease, calcaneal spur, other forms of cancer; PhD = Doctor of Philosophy.

3.9 Data Collection

Data collection was conducted using pre-tested structured and interviewer-administered questionnaires during the months of April to June 2021. The aim of the pre-test was to determine a suitable methodology and data collection tool for appropriate adjustments during the scale up. Further, the pre-test helped to assess validity of the tools and to guide in addressing any unforeseen limitations. The questionnaire comprised of four parts namely; sociodemographic characteristics, body mass index, lifestyle factors and WPAI-GH for estimating sickness presenteeism.

3.9.1 Data Collection Tool

The first three parts of the questionnaire were formulated by the researcher in English dialect while the last section was modified from the universal questionnaire WHO approved Work Productivity and Activity Impairment –General Health V2.0 (WPAI:GH) questionnaire.

3.9.2 Data Quality Control

Three research assistants (RAs) and an ICT officer were trained for 3 days on the use of electronic gadgets for surveys particularly data collection techniques, operating a weighing scale, stadiometer and on ethical issues. Data was collected using structured interviewer-administered questionnaire which was uploaded on Open Data Kit (ODK) survey tool. A pre-test was conducted using a sample of 38 respondents (10% of desired sample size). prior to the pre-test, survey questionnaires were modified accordingly for the main study. Finally, questionnaires were checked for completeness before data entry process and cleaning of the data was performed before analysis.

3.10 Study Variables

3.10.1 Dependent Variable

Dependent variable of the study was sickness presenteeism which was measured using a single item; during the past seven days, how much did your health limit your performance at work? A ten-point Likert scale was used where zero (0) was translated to mean that no health problem existed which could prevent the respondent from working while 1 to 10 meant health problem which prevented respondents from working. For multivariable logistic regression, response scale was categorized into two levels as $< 5 = 0$ and $\geq 5 = 1$. Respondents who indicated that they had experience limitation of less than five (<5) in the scale were considered to have experienced moderate form of sickness presenteeism while 5 or more (≥ 5) on Likert scale was interpreted as severe form of sickness presenteeism.

3.10.2 Independent Variables

Predictor variables of this study were classified into four categories namely; sociodemographic factors, body mass index, lifestyle factors, and medical conditions. Sociodemographic characteristics comprised of age, sex, level of education, income, marital status and cadre. Body mass index (kg/m^2) of respondents was calculated from measured body weight (kg) of the respondent divided by the square of height (m^2) (World Health Organization, 2019) which was classified into three broad categories namely normal weight, overweight, obesity (measured in three classes). Further, the respondents were asked about lifestyle factors that determined individual lifestyle such as participation in physical activity, alcohol use and smoking status. Finally, respondents were asked about the existence of medical conditions from a list of health conditions that were associated with BMI such as osteoarthritis (or other forms of MSD), obesity, hypertension, coronary heart disease, stroke, breathing problems and cancer.

3.11 Data Processing and analysis

The study employed Open Data Kit (ODK) survey tool to enter, clean and guarantee completeness of the data. STATA software version 11.2 was applied during analysis. Descriptive statistics were summarized as percentages, frequencies, mean and standard deviation while binomial multiple logistic regression was conducted to ascertain influence of the predictor variables on the outcome variable.

3.12 Minimization of errors and biases

Due to self-reporting of sickness presenteeism by study participants, the researcher identified a risk of recall bias and devised various techniques to minimize the identified risk. First, the study considered a shorter recall period of seven (7) days from the date of interview. Secondly, a huge response rate of 343 responses from 373 targeted participants (92% response rate) inspired confidence on the meaningful range of responses.

3.13 Ethical approval, authorizations and considerations

Permission to undertake research was obtained from School of Public Health - University of Nairobi. Authorization was also acquired from KNH-UoN Ethical Review Committee Approval No. P99/02/2021. In addition, regulatory approval was obtained from National Commission for Science, Technology, and Innovation (NACOSTI) No. NACOSTI/P/21/9999. Administratively, permission was sought from the Medical Research Department of KNH and relevant heads of technical departments who were all informed prior to data collection. Finally, individual consent was obtained from all study respondents who were involved in the study.

3.14 Study Limitations

The study experienced various limitations. Notably, the study obtained information on sickness presence based on self-reported data from respondents. As a result, recall bias and under-reported cases were assumed. Further, the study exempted administrative and support staff which may have possibly affected the study outcomes thus limiting generalization of the study findings to all working populations that contribute to the quality of care. Finally, the study was conducted among healthcare workers based in a single health facility which could limit generalizability of findings to other settings and populations.

3.15 Further Research

Based on the identified gaps, future research could be conducted on the actual prevalence of sickness presenteeism among healthcare workers in several healthcare facilities in Kenya and other workers in administrative roles who contribute to quality of care to determine impact of sickness presenteeism at all levels of care. Further research could utilize administrative data on sickness presenteeism rather than self-reported data and explore the actual economic burden and impact of sickness presenteeism on the quality of care.

CHAPTER FOUR: RESULTS

4.1 Chapter introduction:

The overall proportion of sickness presenteeism among healthcare workers in the study was 8.5% (N=29) during the previous seven days. Majority, 20 (5.8%) of respondents were female healthcare workers who had experienced either moderate limitation (69.25%) or severe limitation while at work (61.5%). Sickness presenteeism was reportedly high, 14 (19.7%) among age 50-59 years. However, sickness presenteeism among respondents varied across age categories, sex, level of education, income and cadres. In addition, respondents experienced varied levels of sickness presenteeism; those who experienced mild limitation at work were 13 (44.8%) same proportion as moderate limitation who were 13 (44.8%) while participants who experienced extreme limitation at work were 10.3% of the participants.

4.2 Descriptive Analyses

A descriptive analysis was performed to describe the characteristics of the study population and presented in frequency tables.

4.2.1 Socio-demographic characteristics

A total of 343 participants successfully completed the survey questionnaire translating to a response rate of 92% (n =343). Participants' age ranged between 23 to 59 years and the mean age was 41.15 years with a standard deviation of ± 8.854 (41.15 ± 8.854). Majority of the respondents (62.97%) were females and majority of respondents were married (81.34%). Categorized by cadre, majority of respondents were nurses (74.34%), followed by medical doctors (14.58%), medical laboratory staffs 5.25%, clinical officers (3.5%) and nutritionists (2.33%) respectively. Analysis of the data by level of education showed that 12.24 % had post-graduate degree (PhD/Masters), 33.24% were first degree holders, 22.45% were Higher National Diploma holders, 31.2% were ordinary diploma holders and 0.87% were certificate holders. Classification by term of employment revealed that healthcare workers on permanent and pensionable term formed majority (88.63%) of the respondents most of whom were high income earners (92.42%). Overall, the reported proportion of sickness presenteeism among respondents stood at 8.45%. (**Table 3**)

Table 3 Descriptive analysis of the study participants (N= 343)

Variable		Frequency (n)	Percentage (%)	Mean (μ)	SD (δ)	Median
Age (yrs.)		343		41.15	8.85	41
Age group (yrs.)	20-29	38	11.08			
	30-39	123	35.86			
	40-49	111	32.36			
	50-59	71	20.70			
Sex	Male	127	37.03			
	Female	216	62.97			
Marital status	Married	279	81.34			
	Single	63	18.37			
	Others ^a	1	0.29			
Professional cadre	Doctors	50	14.58			
	Nurses	255	74.34			
	Clinical officers	12	3.50			
	Laboratory staffs	18	5.25			
	Nutritionists	8	2.33			
Level of education	PhD/Masters	42	12.24			
	Graduate	114	33.24			
	HND	77	22.45			
	Ordinary diploma	107	31.20			
	Certificate	3	0.87			
Type of employment	Permanent	304	88.63			
	Contract	39	11.37			
Income (Kshs.)	$\leq 50,000$	2	0.58			
	$\geq 50,001 - \leq 99,999$	24	7.00			
	$\geq 100,000$	317	92.42			
		343				
Body Mass Index	Normal weight	66	19.24	28.83	4.33	
Body Mass Index	Overweight	152	44.31			
	Obesity (Class I)	97	28.28			
	Obesity (Class II)	25	7.29			
	Obesity (Class III)	3	0.87			
Alcohol use	Yes	153	44.61			
	No	190	55.39			
Smoking status	Yes	11	3.29			
	No	332	96.79			
Physical Activity	Yes					
	15+ min <3 t/w	90	26.24			
	15+ min >3 t/w	127	37.03			
	No	126	36.73			
Medical conditions	Yes	69	20.12			
	No	274	79.88			
Medical conditions	Hypertension	46	61.33			
	Type II Diabetes	10	13.33			
	Osteoarthritis	18	24.0			
	Back pains	2	2.5			
	Others ^b	5	0.01			

Sickness presenteeism					
Work Limitation	Yes	29	8.45		
	No	314	91.55		
Moderate limitation		26	89.7		
Extreme limitation		3	10.3		

Keys: - HND = Higher National Diploma; Kshs. = Kenya Shillings; KNH= Kenyatta National Hospital; min = minutes; Others^a = separated/widowed/divorced; others^b = back pain, heart disease; t/w = times per week;

4.2.2 Body Mass Index (BMI)

Mean BMI among respondents was 28.8 ± 4.3 (range 19.28 – 45.45). None of the study respondents were underweight (BMI < 18.5) and 19.24% of respondents were normal weight (BMI < 25). Majority of respondents were either overweight (44.31%) or obese (36.44%). Among obese respondents, mild obesity was 28.28%, moderate obesity was 7.29% while extreme obesity accounted for 0.87% respectively. (Table 3).

4.2.3 Lifestyle factors among healthcare workers

In relation to lifestyle factors considered in the study, nearly half of the respondents (44.1%) were alcohol users, another 3.29% were active smokers and slightly more than one third (36.73%) of participants did not take part in any form of physical activity. Moreover, less than one third (26.24%) of the respondents took part in forms of physical exercise more than 15 minutes a day for less than three times every week while another 37% of the respondents got involved in physical activity more than 15 minutes a day for more than three times every week. (Table 3)

4.2.4 Medical Conditions associated with sickness presenteeism

Every one in five respondents (20.1%) reported the existence of at least one medical conditions associated with limitations at work. The reported medical conditions that were associated with sickness presence comprised of hypertension (61.33%), osteoarthritis (24%), type II diabetes (13.33%) and back pain (2.5%). Other medical conditions that were associated with sickness presenteeism such as coronary heart diseases and calcaneus spur recorded less than 1% each among study participants. Regarding severity of medical conditions experienced by respondents, one in every ten respondents experienced extreme work limitation while 89.7% of the respondents experienced moderate work limitation. (Table 3).

4.2.5 Multiple binomial logistic regression of factors associated with sickness presenteeism

Further evaluation was performed to establish the link between sickness presenteeism and its hypothesized potential determinants. The analysis focused on sociodemographic factors, body mass index, lifestyle factors and medical conditions among study respondents.

Sociodemographic factors such as age, sex, marital status, level of education, income level and cadre were all considered as potential predictors of sickness presenteeism. Among the sociodemographic factors analysed, only age was significantly associated with sickness presenteeism as age category 50-59years among respondents was 13.7 times likely to experience sickness presenteeism (OR = 13.7; P = 0.046; CI = 1.04 – 180.2) compared to other age categories. Other potential factors including sex, marital status, income, education and cadre were not significantly associated with sickness presenteeism. (**Table 4**)

Table 4: Logistic regression analysis of factors associated with sickness presenteeism

Variable	Category	Sickness Presenteeism		OR (95% CI)	P-values
		No	Yes		
Age (yrs.)	20-29	37	1	Ref	Ref
	30-39	116	7	2.41 (0.205 - 28.267)	0.484
	40-49	104	7	3.48 (0.269 - 45.159)	0.34
	50-59	57	14	13.712 (1.043 – 180.196)	P = 0.046*
Sex	Male	118	9	Ref	Ref
	Female	196	20	0.601 (0.231 - 1.563)	P = 0.296
Marital Status	Married	251	1	Ref	Ref
	Single	62	28	-	-
	Others ^a	1	0	0.137 (0.015 – 1.23)	0.076
Income	<Kshs. 50,000	2	0	Ref	Ref
	Kshs 50,001 – 99,999	22	2	-	-
	>Kshs 100,000	290	27	-	-
Education	PhD/Masters	40	2	Ref	Ref
	First Degree	105	9	-	-
	HND	66	7	-	-
	Diploma/Cert	103	7	-	-
Cadre	Doctors	45	5	Ref	Ref
	Nurses	234	21	3.11 (0.302 -31.91)	0.34
	Clinical Officers	10	2	0.32 (0.021 – 4.91)	0.414
	Laboratory officers	17	1	0.53 (0.083 -3.4)	0.5
	Nutritionists	8	0	-	-
Lifestyle factors and presenteeism					
Participate	Yes	108	10	Ref	Ref
	No	206	19	1.558 (0.416 - 5.833)	0.511
Physical activity	Yes	89	7	Ref	Ref

	2 or more activities	19	3	0.564 (0.131 – 2.431)	0.442
Alcohol Use	Yes	143	10	Ref	Ref
	No	171	19	0.643 (0.282 – 1.467)	0.294
Smoking Status	Yes	10	1	Ref	Ref
	No	304	28	1.41 (0.166-11.999)	0.753
Body Mass Index variables					
	Normal weight	62	4	Ref	Ref
	Overweight	142	10	1.02 (0.33 - 3.61)	0.981
	Mild Obesity	86	11	1.43 (0.376 – 5.46)	0.60
	Moderate obesity	21	4	2.28 (0.42 – 12.36)	0.336
	Extreme obesity	3	0	-	-
Body Mass Index and Medical conditions variables					
	Normal weight	62	4	Ref	Ref
	Overweight	142	10	-	-
	Mild Obesity	86	11	2.114 (0.672 – 6.649)	0.201
	Moderate/Extreme obesity	24	4	1.092 (0.330 – 3.614)	0.886
Medical conditions, lifestyle factors and presenteeism					
	Hypertension	46	8	1.154 (1.01 - 1.30)	0.041*
	Osteoarthritis	18	10	1.226 (1.04 – 1.43)	0.049*
	Type II diabetes	10	5	1.402 (1.15 -1.74)	0.05*
	Back pain	2	2	1.142 (0.97 – 1.32)	0.07
	Heart disease	1	1	1.506 (1.11- 2.03)	0.05*
	Others ^b	5	2	1.039 (0.76 – 1.44)	0.081
Physical activity					
	Yes				
	At least 1 activity	89	7	Ref	Ref
	2 or more activities	19	3	0.461 (0.088 – 2.422)	0.360
Alcohol Use	Yes	143	10	Ref	Ref
	No	171	19	0.952 (0.381 – 2.377)	0.916
Smoking Status	Yes	10	1	Ref	Ref
	No	304	28	4.615 (0.484-43.961)	0.184

*OR = Odds ratio; CI= 95% Confidence interval; others^a = widowed, divorced; separated; others^b = calcaneous spur, certain types of cancer, disc dehydration; Yrs.= years * = significant at 95% CI

Further, body mass index (BMI) factors were analysed as a potential predictors of sickness presence among respondents. The results indicated non-significant correlation between BMI factors and sickness presenteeism {mild obesity (OR = 2.114; P = 0.201; CI = 0.672 – 6.649); moderate/extreme obesity (OR = 1.092; P = 0.886; CI = 0.330 – 3.614)}. On the other hand, BMI was known to be associated with medical conditions (Kopelman, 2000; Udo, Purcell, & Grilo, 2016; Williams, Mesidor, Winters, Dubbert, & Wyatt, 2015) which prompted further

analyses to establish if any relationships existed between BMI and medical conditions that were correlated with sickness presence. Results of analyses between BMI and medical conditions (**Table 4**) revealed that healthcare workers who had moderate or extreme obesity were 2.3 times likely to experience one or more medical conditions such as hypertension, type II diabetes, osteoarthritis, back pain and heart disease among others as shown in **table 4**. Based on this result, it was evident that healthcare workers' body mass index was a predisposing factor for medical conditions that were linked to sickness presence. Further investigation performed to establish the link between medical condition and sickness presence reported significant correlation among various variables considered in the study.

Lifestyle factors were equally analysed in the study to determine their relationship with sickness presenteeism among respondents. Lifestyle factors considered in this study included participation in physical exercise for at least 15 minutes a day three times a week, alcohol use and smoking status among study participants. The results showed that, compared to participation in at least one form of physical activity, taking part in two or more forms of physical activity (15 or more minutes a day for 3 or more times every week) was not significantly linked to sickness presenteeism (OR = 0.461; P = 0.36; CI = 0.088 – 2.422). In addition, both alcohol consumption (OR = 0.952; P = 0.916; CI = 0.381 – 2.377) and smoking status (OR = 4.165; P = 0.184; CI = 0.484 – 43.961) were not significantly associated with sickness presenteeism among respondents. (**Table 4**).

Further investigations were undertaken to establish the link between various medical conditions among study respondents and sickness presenteeism. The results revealed that respondents who had medical conditions such as hypertension, type II diabetes and musculoskeletal disorders (osteoarthritis, back pain) recorded varying results based on the specific medical conditions reviewed. Respondents with hypertension were 1.2 times likely to experience sickness presence (OR = 1.1544; p = 0.041; CI = 1.01 – 1.30). Similarly, respondents with osteoarthritis were 1.2 times likely to experience sickness presence (OR=1.1226; p = 0.049; CI = 1.04 – 1.43) while participants with type II diabetes were 1.4 times likely to experience sickness presence (OR=1.402; p = 0.05; CI = 1.15 – 1.74). Respondents with heart disease were 1.5 times likely to experience sickness presence (OR=1.506; p = 0.05; CI = 1.11 – 2.03). However, back pain (OR=1.142; p = 0.07; CI = 0.97 – 1.32) calcaneus spur, disc dehydration and types of cancer (OR=1.039; p = 0.081; CI = 0.76 – 1.44) were not significantly associated with sickness presenteeism.

CHAPTER FIVE: DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 Chapter introduction

This chapter presents a summary of the discussions of study findings, interpretations of study results and linkage of literature to the research outcomes. The chapter also provides a synopsis of conclusion and recommendations for consideration.

5.2 Discussions

Sickness presenteeism is an emerging global public health challenge that continues to impair work productivity among all occupations including healthcare workers. However, very little attention has been paid to studies that are focusing on sickness presenteeism to address the matter. The primary intention of this study was therefore to ascertain factors associated with sickness presenteeism among healthcare workers in Kenyatta National Hospital, Kenya.

The study identified components of socio-demographic factors as predictors of sickness presence among study respondents. Amongst the sociodemographic factors, sickness presenteeism was significantly correlated with age category 50-59 years. The result was consistent with that of a study done in United Kingdom among prison officers (Kinman et al., 2019) which revealed that older populations were likely to experience presenteeism at workplace. Medical conditions such as osteoarthritis, hypertension and other lifestyle conditions among participants in the age group 50-59 years for instance might explain a possible reason for the association with sickness presenteeism. Contrastingly, the findings contradicted another study on presenteeism in Canada (Gosselin et al., 2013) which reported that sickness presenteeism was more prevalent among young to middle-age workers due to strict attendance requirement by low-grade staff. This difference might be explained by the less likelihood of young to middle-aged healthcare workers to experience medical conditions that would predispose them to sickness presenteeism compared to their older counterparts.

However, other sociodemographic factors considered in this study such as sex, marital status, income, level of education and cadre of respondents were not significant predictors of sickness presenteeism. These results were comparable various studies including results of a study among nursing staff at a hospital in Portugal (Martinez & Ferreira, 2012) which reported that there were no gender differences among participants who experienced sickness presenteeism. The findings were also similar to another study in Swedish healthcare organization (Sendén et al.,

2016) which found no significant differences by marital status among study participants who experienced sickness presenteeism. A probable justification of the non-significant relationship between gender and sickness presenteeism might be that the study participants were less likely to report any existing health conditions due to fear of administrative action hence no apparent gender differences were recorded among participants who experienced sickness presenteeism. In relation to the association between sickness presenteeism and marital status, a suggestion might be that married couples oftentimes have better health-seeking behaviour compared to their unmarried counterparts hence are more unlikely to report to work while ill. Conversely, the results contradicted findings of several other studies (Aronsson et al., 2000a; Miraglia M, 2015; Sendén et al., 2016) which found out that more female workers experienced moderate to severe forms of sickness presenteeism while at work. The results also contradicted the findings of other studies (Aronsson et al., 2000a; Cocker et al., 2011; Mekonnen et al., 2018; Yang et al., 2016) which associated sociodemographic factors including respondents' sex, marital status, level of education, income status and cadre to sickness presence. A possible explanation for this contradicting findings might be that participants in this study were more knowledgeable on the predisposing health conditions of sickness presenteeism hence were less likely to accurately report their experience. Another possible suggestion might be that the higher the educational level and income status, the more likelihood of seeking medical attention hence the less probability of either having an experience or even reporting sickness presenteeism.

Body Mass Index (BMI) factors were not significantly associated with sickness presence among respondents. The results showed that there were no direct links between respondents' BMI and sickness presenteeism controlling for all other variables. This finding was comparable to results of a similar study performed in Australia among medical doctors (Winona Pit & Hansen, 2016) which revealed that BMI on its own was not directly associated with sickness presenteeism. Further analyses in this study found that there was a direct relationship between various medical conditions that were associated with BMI such as Musculoskeletal Disorders (MSDs) including osteoarthritis, hypertension and diabetes among others thereby indirectly associating BMI with sickness presenteeism among study respondents. A study from United states (Viestar et al., 2013) and many other independent studies (Aronsson et al., 2000a; Druss et al., 2001; Janssens et al., 2012b, 2012a; Merrill et al., 2012; Sanderson et al., 2007; Schell et al., 2013) also had similar findings. A possible explanation might be that BMI factors such as overweight and obesity on their own do not cause any limitations or forms of productivity impairment among healthcare workers but play an intermediate role in predisposing individual

workers to associated health conditions which may in turn cause physical limitations at work place thus impairing work productivity and thereby compromising quality of services including healthcare services provided by healthcare workers.

Lifestyle factors that were equally considered in the study such as participation in physical activity, alcohol consumption and smoking among respondents were all found to have no direct relationship with sickness presenteeism among healthcare workers. These results were in coherence with results from a study in the United States (Bunn et al., 2006) which reported no significant association between smoking and sickness presenteeism and another study conducted among Australian doctors (Winona Pit & Hansen, 2016) which reported no significant association between alcohol consumption with sickness presenteeism. A possible reason might be that healthcare workers are knowledgeable on behavioral/lifestyle factors as risk factors for non-communicable conditions and are less likely to provide accurate information on their involvement in these apparently risky lifestyle factors. The other possible reason might be due to the fact that healthcare workers may have underreported their involvement in physical activities in anticipation of administrative and/or policy interventions such as incentives, subsidies to gym facilities or provision of health promotion facilities in their workplace among others. On the other hand, these results contradicted several findings (Aas et al., 2017; Bunn et al., 2006; Guertler et al., 2015; Verster et al., 2014; Winona Pit & Hansen, 2016) which found a positive association between lifestyle factors and sickness presenteeism. A possible explanation could be that there might have been strict policy against smoking in the healthcare facility which might have discouraged accurate reporting on the actual smoking status by healthcare workers in the study. (**Table 4**)

Finally, various medical conditions that were associated with sickness presenteeism such as hypertension, osteoarthritis, type II diabetes and heart disease were positively identified as significant predictors of sickness presenteeism among healthcare workers in the study. This finding was consistent with various similar studies (Bracewell LM, 2019; Burton et al., 2004; Campo & Darragh, 2012; d'Errico et al., 2013; Martinez & Ferreira, 2012; Mekonnen et al., 2018; Pohling et al., 2016; Whysall et al., 2018; Yoshimoto et al., 2020) which reported positive association between medical conditions among workers and sickness presenteeism. Possible explanation was that medical conditions caused limited movement and functionality in undertaking routine duties related to provision of healthcare services thus impairing work productivity and quality of care. However, this study did not explore if medical conditions such as diabetes and hypertension among respondents were controlled or uncontrolled and the extent

to which this difference had an effect on sickness presence among respondents thus further studies were recommended on this area.

5.3 Conclusion

The study identified predictors of sickness presenteeism among healthcare workers. Sociodemographic factors measured in the study showed that a rise in age of the participants increased the risk of sickness presence which was demonstrated by the fact that the highest age category (50-59years) was the most at risk of sickness presenteeism among study respondents. Further, participants' body mass index was predominantly a predisposing factor for medical conditions linked with sickness presenteeism. Moreover, lifestyle factors such as alcohol consumption, smoking and participation in physical activity did not have any direct association with sickness presenteeism. Generally, medical conditions commonly reported by respondents such as hypertension, osteoarthritis, diabetes type II and heart disease were identified as the predictors of sickness presenteeism among respondents in this study.

5.4 Recommendations

Healthcare managers and policy makers should institute strategies and measures to address various factors that are linked to sickness presenteeism among healthcare workers. The following are the recommendations of the study based on the findings:

1. Health organizations should incorporate health education and promotion programmes at workplace as key interventions towards prevention and control of sickness presenteeism. Strategies such as health screening for lifestyle conditions such as hypertension and diabetes among others should be used to identify early warning signs to detect and manage medical conditions that predispose healthcare workers to sickness presenteeism.
2. Policy makers and administrators should implement key prevention and control strategies geared towards reduction of sickness presenteeism among healthcare workers including formulation and enforcement of administrative policies on sick leave and health-seeking behaviour among healthcare workers. Other strategies should incorporate comprehensive provision of medical insurance to promote access to quality healthcare among healthcare workers, retention of adequate staff at workplace to permit

staff replacement in case of sickness to reduce the burden of sickness presenteeism among healthcare workers.

3. Healthcare organizations and policy makers should also incentivize healthy lifestyles at workplace to reward healthcare workers who participate in regular physical activity. This should include provision of work health promotion programmes such as staff gyms, restriction of organic foods in staff canteens and other facilities that promote healthy lifestyles. Further, healthcare organizations should implement good human resource management practices that promote working in shifts, encourage adequate rest among sick staffs to promote recovery and healthy workplace culture.
4. Healthcare organizations and managers should put in place and enforce administrative policies to providing adequate mechanisms for self-reporting of sickness among staffs and promote policy changes that incorporate healthy lifestyles such as physical activity, smoking cessation, and reduced alcohol use to prevent and control sickness presenteeism among healthcare workers.
5. Finally, further studies should be conducted on the economic burden of sickness presence among healthcare workers and its impact on the quality of healthcare.

REFERENCES

- Aas, R. W., Haverlaen, L., Sagvaag, H., & Thørrisen, M. M. (2017). The influence of alcohol consumption on sickness presenteeism and impaired daily activities. The WIRUS screening study. *PLoS ONE*, *12*(10), 1–14. <https://doi.org/10.1371/journal.pone.0186503>
- Al Nuhait, M., Al Harbi, K., Al Jarboa, A., Bustami, R., Alharbi, S., Masud, N., ... Almodaimegh, H. (2017). Sickness presenteeism among health care providers in an academic tertiary care center in Riyadh. *Journal of Infection and Public Health*, *10*(6), 711–715. <https://doi.org/10.1016/j.jiph.2016.09.019>
- Aronsson, G., & Gustafsson, K. (2005). Sickness presenteeism: Prevalence, attendance-pressure factors, and an outline of a model for research. *Journal of Occupational and Environmental Medicine*, *47*(9), 958–966. <https://doi.org/10.1097/01.jom.0000177219.75677.17>
- Aronsson, G., Gustafsson, K., & Dallner, M. (2000a). Sick but yet at work. An empirical study of sickness presenteeism. *Journal of Epidemiology and Community Health*, *54*(7), 502–509. <https://doi.org/10.1136/jech.54.7.502>
- Aronsson, G., Gustafsson, K., & Dallner, M. (2000b). Sick but yet at work. An empirical study of sickness presenteeism. *Journal of Epidemiology and Community Health*, *54*(7), 502–509. <https://doi.org/10.1136/jech.54.7.502>
- Beaton, D., Bombardier, C., Escorpizo, R., Zhang, W., Lacaille, D., Boonen, A., ... Tugwell, P. S. (2009). Measuring worker productivity: Frameworks and measures. *Journal of Rheumatology*, *36*(9), 2100–2109. <https://doi.org/10.3899/jrheum.090366>
- Belita, A., Mbindyo, P., & English, M. (2013). Absenteeism amongst health workers - developing a typology to support empiric work in low-income countries and characterizing reported associations. *Human Resources for Health*, *11*(1), 1–10. <https://doi.org/10.1186/1478-4491-11-34>
- Bergström, G., Bodin, L., Hagberg, J., Lindh, T., Aronsson, G., & Josephson, M. (2009). Does sickness presenteeism have an impact on future general health? *International Archives of Occupational and Environmental Health*, *82*(10), 1179–1190. <https://doi.org/10.1007/s00420-009-0433-6>
- Bockerman, P., & Laukkanen, E. (2010). Predictors of sickness absence and presenteeism: Does the pattern differ by a respondent's health? *Journal of Occupational and Environmental Medicine*, *52*(3), 332–335. <https://doi.org/10.1097/JOM.0b013e3181d2422f>

- Bracewell LM, C. DI. (2019). Sickness presenteeism in a New Zealand Hospital. *The New Zealand Wars*, (May 2010). https://doi.org/10.7810/9781988545998_3
- Bramley, T. J., Lerner, D., & Sarnes, M. (n.d.). Productivity Losses Related to the Common Cold : *Journal of Occupational and Environmental Medicine*, 822–829. <https://doi.org/10.1097/01.jom.0000026644.83602.29>
- Brborović, H., Daka, Q., Dakaj, K., & Brborović, O. (2017). Antecedents and associations of sickness presenteeism and sickness absenteeism in nurses: A systematic review. *International Journal of Nursing Practice*, 23(6). <https://doi.org/10.1111/ijn.12598>
- Bunn, W. B., Stave, G. M., Downs, K. E., Alvir, J. M. J., & Dirani, R. (2006). Effect of smoking status on productivity loss. *Journal of Occupational and Environmental Medicine*, 48(10), 1099–1108. <https://doi.org/10.1097/01.jom.0000243406.08419.74>
- Burton, W. N., Pransky, G., Conti, D. J., Chen, C. Y., & Edington, D. W. (2004). The association of medical conditions and presenteeism. *Journal of Occupational and Environmental Medicine*, 46(6 SUPPL.), 38–45. <https://doi.org/10.1097/01.jom.0000126687.49652.44>
- Campo, M., & Darragh, A. R. (2012). Work-related musculoskeletal disorders are associated with impaired presenteeism in allied health care professionals. *Journal of Occupational and Environmental Medicine*, 54(1), 64–70. <https://doi.org/10.1097/JOM.0b013e31823c768a>
- Caverley, N., Barton Cunningham, J., & MacGregor, J. N. (2007). Sickness presenteeism, sickness absenteeism, and health following restructuring in a public service organization. *Journal of Management Studies*, 44(2), 304–319. <https://doi.org/10.1111/j.1467-6486.2007.00690.x>
- Cochran, W. G. (1977). *Sampling Techniques* (3rd Editio). New York: Wiley.
- Cocker, F., Martin, A., Scott, J., Venn, A., Otahal, P., & Sanderson, K. (2011). Factors associated with presenteeism among employed Australian adults reporting lifetime major depression with 12-month symptoms. *Journal of Affective Disorders*, 135(1–3), 231–240. <https://doi.org/10.1016/j.jad.2011.07.028>
- Cooper, C., & Dewe, P. (2008). Well-being - Absenteeism, presenteeism, costs and challenges. *Occupational Medicine*, 58(8), 522–524. <https://doi.org/10.1093/occmed/kqn124>
- d'Errico, A., Viotti, S., Baratti, A., Mottura, B., Barocelli, A. P., Tagna, M., ... Converso, D. (2013). Low back pain and associated presenteeism among hospital nursing staff. *Journal of Occupational Health*, 55(4), 276–283. <https://doi.org/10.1539/joh.12-0261->

OA

- De Beer, L. T. (2014). The effect of presenteeism-related health conditions on employee work engagement levels: A comparison between groups. *SA Journal of Human Resource Management, 14*(1), 1–8. <https://doi.org/10.4102/sajhrm.v12i1.640>
- Demerouti, E., Le Blanc, P. M., Bakker, A. B., Schaufeli, W. B., & Hox, J. (2009). Present but sick: A three-wave study on job demands, presenteeism and burnout. *Career Development International, 14*(1), 50–68. <https://doi.org/10.1108/13620430910933574>
- Dobson, M., Schnall, P., Roskam, E., & Landsbergis, P. (2019). Work-Related Burden of Absenteeism, Presenteeism, and Disability: An Epidemiologic and Economic Perspective. *Handbook of Disability, Work and Health*, 1–22. https://doi.org/10.1007/978-3-319-75381-2_13-1
- Druss, B. G., Schlesinger, M., & Allen, H. M. (2001). Depressive symptoms, satisfaction with health care, and 2-year work outcomes in an employed population. *American Journal of Psychiatry, 158*(5), 731–734. <https://doi.org/10.1176/appi.ajp.158.5.731>
- Edwards, C. H., Tomba, G. S., & De Blasio, B. F. (2016). Influenza in workplaces: Transmission, workers' adherence to sick leave advice and European sick leave recommendations. *European Journal of Public Health, 26*(3), 478–485. <https://doi.org/10.1093/eurpub/ckw031>
- Elstad, J. I., & Vabø, M. (2008). Job stress, sickness absence and sickness presenteeism in Nordic elderly care. *Scandinavian Journal of Public Health, 36*(5), 467–474. <https://doi.org/10.1177/1403494808089557>
- Escudero, V., Friedlander, M. L., Varela, N., & Abascal, A. (2008). Observing the therapeutic alliance in family therapy: Associations with participants' perceptions and therapeutic outcomes. *Journal of Family Therapy, 30*(2), 194–214. <https://doi.org/10.1111/j.1467-6427.2008.00425.x>
- Fisher, C. A., Hoffman, K. J., Austin-Lane, J., & Kao, T. C. (2000). The relationship between heavy alcohol use and work productivity loss in active duty military personnel: A secondary analysis of the 1995 Department of Defense Worldwide Survey. *Military Medicine, 165*(5), 355–361. <https://doi.org/10.1093/milmed/165.5.355>
- Garrido et al., 2009. (2009). Metabolic syndrome and obesity among workers at Kanye Seventh-Day Adventist Hospital, Botswana, *99*(5), 331–334.
- Gates, D. M., Succop, P., Brehm, B. J., Gillespie, G. L., & Sommers, B. D. (2008). Obesity and presenteeism: The impact of body mass index on workplace productivity. *Journal of Occupational and Environmental Medicine, 50*(1), 39–45.

<https://doi.org/10.1097/JOM.0b013e31815d8db2>

- Giæver, F., Lohmann-Lafrenz, S., & Løvseth, L. T. (2016). Why hospital physicians attend work while ill? The spiralling effect of positive and negative factors. *BMC Health Services Research, 16*(1), 1–7. <https://doi.org/10.1186/s12913-016-1802-y>
- Gosselin, E., Lemyre, L., & Corneil, W. (2013). Presenteeism and absenteeism: Differentiated understanding of related phenomena. *Journal of Occupational Health Psychology, 18*(1), 75–86. <https://doi.org/10.1037/a0030932>
- Guertler, D., Vandelanotte, C., Short, C., Alley, S., Schoeppe, S., & Duncan, M. J. (2015). The association between physical activity, sitting time, sleep duration, and sleep quality as correlates of presenteeism. *Journal of Occupational and Environmental Medicine, 57*(3), 321–328. <https://doi.org/10.1097/JOM.0000000000000355>
- Gustafsson, K., Bergström, G., Marklund, S., Aboagye, E., & Leineweber, C. (2019). Presenteeism as a predictor of disability pension: A prospective study among nursing professionals and care assistants in Sweden. *Journal of Occupational Health, 61*(6), 453–463. <https://doi.org/10.1002/1348-9585.12070>
- Health Act No. 21 of 2017; Laws of Kenya. Health Act No. 21 of 2017, Pub. L. No. Act No. 21 of 2017, 420 (2017). Kenya: Kenya Law. Retrieved from <http://kenyalaw.org:8181/exist/kenyalex/actview.xql?actid=No.21of2017>
- Hemp, P. (2004). At Work But Out of It. *Harvard Business Review, October*, 1–10.
- Homrich, P. H. P., Dantas-Filho, F. F., Martins, L. L., & Marcon, E. R. (2020). Presenteeism among health care workers: Literature review. *Revista Brasileira de Medicina Do Trabalho, 18*(1), 97–102. <https://doi.org/10.5327/Z1679443520200478>
- Janssens, H., Clays, E., Kittel, F., De Bacquer, D., Casini, A., & Braeckman, L. (2012a). The association between body mass index class, sickness absence, and presenteeism. *Journal of Occupational and Environmental Medicine, 54*(5), 604–609. <https://doi.org/10.1097/JOM.0b013e31824b2133>
- Janssens, H., Clays, E., Kittel, F., De Bacquer, D., Casini, A., & Braeckman, L. (2012b). The association between body mass index class, sickness absence, and presenteeism. *Journal of Occupational and Environmental Medicine, 54*(5), 604–609. <https://doi.org/10.1097/JOM.0b013e31824b2133>
- Jeon, S. H., Leem, J. H., Park, S. G., Heo, Y. S., Lee, B. J., Moon, S. H., ... Kim, H. C. (2014). Association among working hours, occupational stress, and presenteeism among wage workers: Results from the second Korean Working Conditions Survey. *Annals of Occupational and Environmental Medicine, 26*(1), 1–8. <https://doi.org/10.1186/2052->

- Johansson, G., & Lundberg, I. (2009). Components of the illness flexibility model as explanations of socioeconomic differences in sickness absence. *International Journal of Health Services, 39*(1), 123–138. <https://doi.org/10.2190/HS.39.1.f>
- Johns, G. (2010). Presenteeism in the workplace; A review and Research Agenda. *Journal of Organizational Behaviour, 31*, 519–542. <https://doi.org/10.1002/job>
- Johns, G. (2011). Attendance Dynamics at Work: The Antecedents and Correlates of Presenteeism, Absenteeism, and Productivity Loss. *Journal of Occupational Health Psychology, 16*(4), 483–500. <https://doi.org/10.1037/a0025153>
- Kinman, G., Clements, A. J., & Hart, J. (2019). When Are You Coming Back? Presenteeism in U.K. Prison Officers. *Prison Journal, 99*(3), 363–383. <https://doi.org/10.1177/0032885519838019>
- Kirkham, H. S., Clark, B. L., Bolas, C. A., Lewis, G. H., Jackson, A. S., Fisher, D., & Duncan, I. (2015). Which modifiable health risks are associated with changes in productivity costs? *Population Health Management, 18*(1), 30–38. <https://doi.org/10.1089/pop.2014.0033>
- Kopelman, P. G. (2000). Obesity as a medical problem. *Nature, 404*(6778), 635–643. <https://doi.org/10.1038/35007508>
- Kotseva, K., Gerlier, L., Sidelnikov, E., Kutikova, L., Lamotte, M., Amarenco, P., & Annemans, L. (2019). Patient and caregiver productivity loss and indirect costs associated with cardiovascular events in Europe. *European Journal of Preventive Cardiology, 26*(11), 1150–1157. <https://doi.org/10.1177/2047487319834770>
- Leineweber, C., Westerlund, H., Hagberg, J., Svedberg, P., & Alexanderson, K. (2012). Sickness presenteeism is more than an alternative to sickness absence: Results from the population-based SLOSH study. *International Archives of Occupational and Environmental Health, 85*(8), 905–914. <https://doi.org/10.1007/s00420-012-0735-y>
- Letvak, S. A., Ruhm, C. J., & Gupta, S. N. (2012). Nurses' presenteeism and its effects on self-reported quality of care and costs. *The American Journal of Nursing, 112*(2).
- Martinez, L. F., & Ferreira, A. I. (2012). Sick at work: Presenteeism among nurses in a Portuguese public hospital. *Stress and Health, 28*(4), 297–304. <https://doi.org/10.1002/smi.1432>
- McKechnie, J., & Hill, E. M. (2009). Alcoholism in older women religious. *Substance Abuse, 30*(2), 107–117. <https://doi.org/10.1080/08897070902802026>
- Mdziniso, B. T. S. (2016). Analysis of Sickness presenteeism prevalence among nurses

- working in selected health facilities in Swaziland, (April).
- Mekonnen, T. H., Tefera, M. A., & Melsew, Y. A. (2018). Sick at work: Prevalence and determinants among healthcare workers, western Ethiopia: An institution based cross-sectional study. *Annals of Occupational and Environmental Medicine*, 30(1), 1–10. <https://doi.org/10.1186/s40557-018-0213-4>
- Mensah, Julia, Korir, J., Nugent, R., & Hutchinson, B. (2020). Combating Noncommunicable Diseases in Kenya: An Investment Case. *Combating Noncommunicable Diseases in Kenya: An Investment Case*. <https://doi.org/10.1596/33539>
- Mensah, Justice. (2023). Determinants of sickness presenteeism among Ghanaian workers : A cross-sectional study.
- Merrill, R. M., Aldana, S. G., Pope, J. E., Anderson, D. R., Coberley, C. R., & Whitmer, R. W. (2012). Presenteeism according to healthy behaviors, physical health, and work environment. *Population Health Management*, 15(5), 293–301. <https://doi.org/10.1089/pop.2012.0003>
- Michelle Freeling, Jessica G Rainbow, D. C. (2020). Painting a picture of nurse presenteeism: A multi-country integrative review. *International Journal of Nursing Practice*. <https://doi.org/10.1016/j.ijnurstu.2020.103659>
- Min, A., Kang, M., & Park, H. (2022). Global prevalence of presenteeism in the nursing workforce: A meta-analysis of 28 studies from 14 countries. *Journal of Nursing Management*, 30(7), 2811–2824. <https://doi.org/10.1111/jonm.13688>
- Ministry of Health Kenya. (2023). National Guidelines on workplace mental wellness. Retrieved November 13, 2023, from <https://www.health.go.ke/node/716>
- Miraglia M, J. G. (2015). Going to work ill; a meta-analysis of the correlates of presenteeism and dual-path model, 44(1), 1–27.
- Munir, F., Yarker, J., & Haslam, C. (2008). Sickness absence management: Encouraging attendance or “risk-taking” presenteeism in employees with chronic illness? *Disability and Rehabilitation*, 30(19), 1461–1472. <https://doi.org/10.1080/09638280701637380>
- Ngarachu, E. W. (2018). The Effect of remission in schizophrenia on employee absenteeism and presenteeism in the workplace.
- Ngeno, W.K; Muathe, S. M. A. (2014). Critical Review of Literature on Employee Wellness Programs in Kenya. *International Journal of Research In Social Sciences*, 4(8), 32–41. Retrieved from <https://pdfs.semanticscholar.org/d338/604ca563e56b4c554c523558a85f2db03ef9.pdf>
- Nilsen, T. I. L., Holtermann, A., & Mork, P. J. (2011). Physical exercise, body mass index,

- and risk of chronic pain in the low back and neck/shoulders: Longitudinal data from the nord-trøndelag health study. *American Journal of Epidemiology*, *174*(3), 267–273.
<https://doi.org/10.1093/aje/kwr087>
- Nwosu, A. D. G., Ossai, E., Onwuasoigwe, O., Ezeigweneme, M., & Okpamen, J. (2021). Burnout and presenteeism among healthcare workers in Nigeria: Implications for patient care, occupational health and workforce productivity. *Journal of Public Health Research*, *10*(1), 1–8. <https://doi.org/10.4081/jphr.2021.1900>
- Oliveria, S. A., Felson, D. T., Cirillo, P. A., Reed, J. I., Alexander, M., Epidemiology, S., ... Reed, I. (2016). Body weight, Body Mass Index and incident symptomatic osteoarthritis of hand, hip and knee, *10*(2), 161–166.
- Ondicho, M. Z., Omondi, D. O., & Onyango, A. C. (2016). Prevalence and Socio-demographic Factors Associated with Overweight and Obesity among Healthcare Workers in Kisumu East Sub-County, Kenya. *American Journal of Medicine and Medical Sciences*, *6*(3), 66–72. <https://doi.org/10.5923/j.ajmms.20160603.02>
- Pei, P., Lin, G., Li, G., Zhu, Y., & Xi, X. (2020). The association between doctors' presenteeism and job burnout: A cross-sectional survey study in China. *BMC Health Services Research*, *20*(1), 1–7. <https://doi.org/10.1186/s12913-020-05593-9>
- Pereira, F., Querido, A. I., Bieri, M., Verloo, H., & Laranjeira, C. A. (2021). Presenteeism among nurses in switzerland and portugal and its impact on patient safety and quality of care: Protocol for a qualitative study. *JMIR Research Protocols*, *10*(5).
<https://doi.org/10.2196/27963>
- Pohling, R., Buruck, G., Jungbauer, K. L., & Leiter, M. P. (2016). Work-related factors of presenteeism: The mediating role of mental and physical health. *Journal of Occupational Health Psychology*, *21*(2), 220–234. <https://doi.org/10.1037/a0039670>
- Prater, T., & Smith, K. (2011). Underlying Factors Contributing To Presenteeism And Absenteeism. *Journal of Business & Economics Research (JBER)*, *9*(6), 1.
<https://doi.org/10.19030/jber.v9i6.4374>
- Rasmussen, B., Sweeny, K., & Sheehan, P. (2015). Economic Costs of Absenteeism, Presenteeism and Early Retirement Due to Ill Health: A Focus on Brazil. *Victoria Institute of Strategic Economic Studies*, (November), 13. Retrieved from <https://www.brazilcouncil.org/wp-content/uploads/2016/04/Econ.-Cost-of-Absenteeism-Presenteeism-and-Early-Retirement-due-to-ill-health-Brazil.pdf>
- Rasmussen, B., Sweeny, K., & Sheehan, P. (2016). Health and Economy: The Impact of Wellness on Workforce Productivity in Global Markets, 28. Retrieved from

https://www.uschamber.com/sites/default/files/documents/files/global_initiative_on_health_and_the_economy_-_report.pdf

- Reilly, M. C., Zbrozek, I. A. S., & Dukes, E. M. (1993). The Validity and Reproducibility of a Work Productivity and Activity Impairment Instrument, *4*(m), 353–365.
- Ricci, J. A., & Chee, E. (2005). Lost productive time associated with excess weight in the U.S. workforce. *Journal of Occupational and Environmental Medicine*, *47*(12), 1227–1234. <https://doi.org/10.1097/01.jom.0000184871.20901.c3>
- Saarni, S. I., Suvisaari, J., Sintonen, H., Pirkola, S., Koskinen, S., Aromaa, A., & Lönnqvist, J. (2007). Impact of psychiatric disorders on health-related quality of life: General population survey. *British Journal of Psychiatry*, *190*(APR.), 326–332. <https://doi.org/10.1192/bjp.bp.106.025106>
- Sanderson, K., Tilse, E., Nicholson, J., Oldenburg, B., & Graves, N. (2007). Which presenteeism measures are more sensitive to depression and anxiety? *Journal of Affective Disorders*, *101*(1–3), 65–74. <https://doi.org/10.1016/j.jad.2006.10.024>
- Sanderson K, C. F. (2013). Presenteeism-implications and health risks. *PubMed*, *42*(4), 172–175.
- Schell, E., Theorell, T., Nilsson, B., & Saraste, H. (2013). Work health determinants in employees without sickness absence. *Occupational Medicine*, *63*(1), 17–22. <https://doi.org/10.1093/occmed/kqs164>
- Schultz, A. B., Chen, C. Y., & Edington, D. W. (2009). The cost and impact of health conditions on presenteeism to employers: A review of the literature. *Pharmacoeconomics*, *27*(5), 365–378. <https://doi.org/10.2165/00019053-200927050-00002>
- Schultz, A. B., & Edington, D. W. (2007). Employee health and presenteeism: a systematic review. *Journal of Occupational Rehabilitation*, *17*(3), 547–579. <https://doi.org/10.1007/s10926-007-9096-x>
- Sendén, M. G., Schenck-Gustafsson, K., & Fridner, A. (2016). Gender differences in Reasons for Sickness Presenteeism - a study among GPs in a Swedish health care organization. *Annals of Occupational and Environmental Medicine*, *28*(1), 1–7. <https://doi.org/10.1186/s40557-016-0136-x>
- Shiri, R., Karppinen, J., Leino-Arjas, P., Solovieva, S., & Viikari-Juntura, E. (2010). The association between obesity and low back pain: A meta-analysis. *American Journal of Epidemiology*, *171*(2), 135–154. <https://doi.org/10.1093/aje/kwp356>
- Silva, B. M. D. C. C., Zanatta, A. B., & De Lucca, S. R. (2017). Prevalence of presenteeism

- among workers of an industrial company. *Revista Brasileira de Medicina Do Trabalho*, 15(3), 236–243. <https://doi.org/10.5327/Z1679443520170011>
- Stewart, W. F., Ricci, J. A., Chee, E., Morganstein, D., & Lipton, R. (2003). Lost Productive Time and Cost Due to Common Pain Conditions in the US Workforce. *Jama*, 290(18), 2443–2454. <https://doi.org/10.1001/jama.290.18.2443>
- Stewart, W. F., Ricci, J. a, Chee, E., Hahn, S. R., & Morganstein, D. (2003). Cost of lost productive time among US Workers With Depression. *JAMA : The Journal of the American Medical Association*, 289(23), 3135–3144.
- Toyoshima, K., Inoue, T., Shimura, A., Masuya, J., Ichiki, M., Fujimura, Y., & Kusumi, I. (2020). Associations between the depressive symptoms, subjective cognitive function, and presenteeism of Japanese adult workers: A cross-sectional survey study. *BioPsychoSocial Medicine*, 14(1), 4–10. <https://doi.org/10.1186/s13030-020-00183-x>
- Tumlinson, K., Gichane, M. W., Curtis, S. L., & Lemasters, K. (2019). Understanding healthcare provider absenteeism in Kenya: A qualitative analysis. *BMC Health Services Research*, 19(1), 1–8. <https://doi.org/10.1186/s12913-019-4435-0>
- Udo, T., Purcell, K., & Grilo, C. M. (2016). Perceived weight discrimination and chronic medical conditions in adults with overweight and obesity. *International Journal of Clinical Practice*, 70(12), 1003–1011. <https://doi.org/10.1111/ijcp.12902>
- Verster, J. C., Van Der Maarel, M. A., McKinney, A., Olivier, B., & De Haan, L. (2014). Driving During Alcohol Hangover Among Dutch Professional Truck Drivers. *Traffic Injury Prevention*, 15(5), 434–438. <https://doi.org/10.1080/15389588.2013.833329>
- Viester, L., Verhagen, E. A., Hengel, K. M. O., Koppes, L. L., Van Der Beek, A. J., & Bongers, P. M. (2013). The relation between body mass index and musculoskeletal symptoms in the working population. *BMC Musculoskeletal Disorders*, 14. <https://doi.org/10.1186/1471-2474-14-238>
- Vingård, E., Alexanderson, K., & Norlund, A. (2004). Sickness presence. *Scandinavian Journal of Public Health, Supplement*, 32(63), 216–221. <https://doi.org/10.1080/14034950410021907>
- Vos, M. C. (2018). Healthcare Workers As a Source of Transmission. *International Society of Infectious Diseases*, 1–6. Retrieved from <https://isid.org/guide/infectionprevention/healthcare-workers/>
- Whysall, Z., Bowden, J., & Hewitt, M. (2018). Sickness presenteeism: measurement and management challenges. *Ergonomics*, 61(3), 341–354. <https://doi.org/10.1080/00140139.2017.1365949>

- Widera, E., Chang, A., & Chen, H. L. (2010). Presenteeism: A public health hazard. *Journal of General Internal Medicine*, 25(11), 1244–1247. <https://doi.org/10.1007/s11606-010-1422-x>
- Williams, E. P., Mesidor, M., Winters, K., Dubbert, P. M., & Wyatt, S. B. (2015). Overweight and Obesity: Prevalence, Consequences, and Causes of a Growing Public Health Problem. *Current Obesity Reports*, 4(3), 363–370. <https://doi.org/10.1007/s13679-015-0169-4>
- Winona Pit, S., & Hansen, V. (2016). The relationship between lifestyle, occupational health, and work-related factors with presenteeism amongst general practitioners. *Archives of Environmental and Occupational Health*, 71(1), 49–56. <https://doi.org/10.1080/19338244.2014.998329>
- World Health Organization. (2006). BMI classification. Retrieved January 28, 2020, from http://apps.who.int/bmi/index.jsp?introPage=intro_3.html
- World Health Organization. (2019). BMI Classification. Retrieved March 14, 2019, from http://apps.who.int/bmi/index.jsp?introPage=intro_3.html
- World Health Organization. (2021). Health. Retrieved January 4, 2021, from <https://www.who.int/about/who-we-are/constitution>
- Yang, T., Zhu, M., & Xie, X. (2016). The determinants of presenteeism: A comprehensive investigation of stress-related factors at work, health, and individual factors among the aging workforce. *Journal of Occupational Health*, 58(1), 25–35. <https://doi.org/10.1539/JOH.15-0114-OA>
- Yaqoob, F. M., & Elhisadi, T. A. (2013). Overweight and Obesity among Health Workers at Wahda Hospital-Derna-Libya, 3–7. <https://doi.org/10.7237/sjmct/117>
- Yıldız, H., Yıldız, B., Zehir, C., & Aykaç, M. (2015). The Antecedents of Presenteeism and Sickness Absenteeism: A Research in Turkish Health Sector. *Procedia - Social and Behavioral Sciences*, 207, 398–403. <https://doi.org/10.1016/j.sbspro.2015.10.109>
- Yoshimoto, T., Oka, H., Fujii, T., Nagata, T., & Matsudaira, K. (2020). The Economic Burden of Lost Productivity due to Presenteeism Caused by Health Conditions Among Workers in Japan. *Journal of Occupational and Environmental Medicine*, 62(10), 883–888. <https://doi.org/10.1097/JOM.0000000000002001>

APPENDICES

Appendix 1: CONSENTING EXPLANATION FORM

TITLE OF THE STUDY: Factors associated with sickness presenteeism among healthcare workers in Kenyatta National Hospital, Kenya

INTRODUCTION TO THE STUDY

My name is **Aggrey Oriema**, a researcher from the University of Nairobi – Master of Public Health. The purpose of this study is to ascertain the influence of Body Mass Index (BMI) on work productivity among healthcare workers in Kenyatta National Hospital, Nairobi-Kenya.

You have been identified to take part in this study as an eligible participant. You are therefore kindly requested to provide information and responses that will support this study.

OPEN, VOLUNTARY PARTICIPATION AND WITHDRAWAL

Taking part in the study is entirely based on your consent to participate. There are no penalties whatsoever, should you choose not to take part. Notwithstanding your approval to participate, you will not be bound to respond to any questions that you are not comfortable answering. Confidentiality will be observed throughout the study and no means of personal identification will be required in this study.

BENEFITS AND RISKS

As a volunteer in the study, the study may benefit you in determining your Body Mass Index as well as making recommendations which may be taken up by the KNH to determine policy change in the workplace such as the consideration of or enhancement of Work Health Promotion Programmes. Besides, the information provided in the study may provide a basis for the improvement of work environment for healthcare workers in this and other health facilities across the Country. However, there are no identified risks of taking part in this research study.

PROCEDURE

As a participant, you are requested provide information for the study through the measurement of your weight and height as well as through filling in of a questionnaire.

The interview sessions and measurement taking of your weight and height will take about a total of 30 minutes.

CONFIDENTIALITY

You will be issued with a consent form for signing which you may preserve a copy for your record. Any form of personal identification including your name, identity number or any other information will not be required for recording. The questionnaires will be kept safely during the study period but will be shredded after the study for confidentiality purposes.

Appendix 2: CONSENTING FORM

STUDY NUMBER _____

I confirm that I have been taken through and understood what the study involves, aim, and type of the study. The confidentiality measures observed, the merits, dangers involved, and I do hereby consent/do not consent to partake of this research study.

Signature of participant _____ Date _____

Signature of the researcher/Research Assistant

Contact Information

In case of any concerns, clarity, or queries regarding this study, be at liberty to contact the Principal Researcher **Aggrey Oriema on Tel: 0721 759 808**, or the Research Supervisors **Dr. George A. Nyadimo on Tel No. 0721 589 544** or **Prof. Joseph Wang'ombe on Tel 0722770006**. You may also contact the Secretary, Kenyatta National Hospital /University of Nairobi – Ethics and Research Committee on Tel: **020 272 6300- Ext. 44102**.

Appendix 3: INTERVIEWER-ADMINISTERED QUESTIONNAIRE

Introduction

My name is _____, I am a Research Assistant in this study that seeks to determine factors associated with sickness presenteeism among healthcare workers in Kenyatta National Hospital, Kenya.

General Instructions

- *Your participation in this study is open, voluntary, and consensual.*
- *It is optional to indicate your name or your identity.*
- *I request you to kindly provide accurate responses in this questionnaire.*
- *This questionnaire will take a maximum of 30 minutes to administer, I therefore request you to spare a few minutes of your busy schedule to take part in this study.*
- *The questionnaire will include oral responses and measurements of your weight and height, I therefore request for your consent in administering this questionnaire (If consent is not granted, discontinue the interview session)*

Date and time of the Interview: _____

Respondent's ID: _____ Interviewer's ID: _____

Department/Section/Unit	Designation

SECTION I: SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Age (*In years*)

How old are you? _____ years.

2. Sex Male Female

3. Marital Status

Single Married Other (*Specify*) _____

4. Cadre of Healthcare worker

Doctor Nurse Clinical Officer Laboratory Staff Nutritionist

Other (*Specify*) _____

5. Term of Employment

Permanent Contract Other (*Specify*) _____

6. Highest Level of Education

Ph.D./Masters Graduate HND Ordinary Diploma Certificate

7. Personal Income (in Kenya shillings)

What is your average monthly income in Kenya Shillings? Kshs. _____

8. Frequency of Physical exercise (Per week)

No exercise 15+ Minutes for <3 times > 15+ minutes for >3 times a week

9. Smoking status

Never smoked Former smoker Current smoker

10. Alcohol Use

Does not currently drink Currently drinks

SECTION 2: BODY MASS INDEX

At this point, I will request to measure your weight and height to ascertain your BMI

Weight (kg) _____ Height (m) _____

From the above measurements, your BMI is _____ which is categorized by WHO classification as (Normal/Overweight/obesity class I/II/III).

SECTION 3: WORK HEALTH PROMOTION PROGRAMMES (WHPP)

Having measured your BMI, I will ask you a few questions on your access to WHPP and your level of participation in WHPP.

1. Have you ever heard of WHPP? Yes No (If No, skip to No. 5)

2. Which WHPP exists in this HF? (Tick mark where applicable)

a) WHPP facilities (Gym, indoor games, outdoor games)

b) Health Education on WHPP for HCW organized by the HF?

- c) Health assessment for HCW organized by the HF?
- d) Physical activity indoor/outdoor facilities (gyms, playing grounds) provided by the HF and accessible to HCW?
- e) Wellness programmes (counseling/coaching/mental health) sessions by the HF
- f) Policies that support healthier work environment (smoking cessation/interrupted sitting programmes, subsidized membership to offsite facilities) implemented by HF?
3. Do you ever participate in any of the above WHPP? Yes No
4. If yes, how many of the above WHPP activities do you ever participate?
- a) At least one activity
- b) Two or more types of activities
5. Do you take part in any Health-promoting lifestyle activities outside the HF? Yes
No
6. If yes, which Health-promoting lifestyle activities do you take part in?
- Gym facilities Sports club Cycling Jogging Running
Indoor games/facilities Others (*specify*) _____
7. How many times a week do you take part in such activities?
- None Once a week for > 15 minutes Two times a week for >15 minutes
Three times a week or more for >15minutes Use of accelerometer

SECTION 4: WORK PRODUCTIVITY

The Work Productivity and Activity Impairment -General Health is a well validated data collection tool used to assess impairments in work and Activities. The study will

Work Productivity and Activity Impairment Questionnaire:

Modified General Health Problem V2.0 (WPAI:GH)

The questions below will find out about the effect that your HEALTH has on your ability to perform work-related activities on regular basis. *Your response will guide me to complete the blanks or to circle the numbered areas in the questionnaire.*

1. How long have you been employed by KNH (working for pay)? _____ years

The following questions will be about your **past seven days**, excluding today.

2. Within the past seven days, how many hours did you miss from work because of reasons associated with your health? *Include hours you missed on sick days, times you went in*

late, left early, etc., because of your health reasons. Do not include time you missed to participate in this study.

_____ HOURS

- 3. During the past seven days, how many hours did you miss from work because of any other reason, such as vacation, holidays, time off to participate in this study?

_____ HOURS

- 4. During the past seven days, how many hours did you offer health service at work?

_____ HOURS (If "0", skip to question 6.)

- 5. During the past seven days, how much did your HEALTH affect your productivity while you were working?

Think about days you were limited in the amount or kind of work you could do, days you accomplished less than you would like, or days you could not do your work as carefully as usual. If HEALTH PROBLEM affected your work only a little, choose a low number. Choose a high number if HEALTH PROBLEM affected your work a great deal.

Consider only how much HEALTH PROBLEM affected productivity while you were working.

PROBLEM had no effect on my work	0 1 2 3 4 5 6 7 8 9 10	PROBLEM completely prevented me from working
--	--	---

CIRCLE A NUMBER

- 6. During the past seven days, how much did your HEALTH PROBLEM affect your ability to do your regular daily activities, other than work at a job?

By regular activities, we mean the usual activities you do, such as work around the house, shopping, childcare, exercising, studying, etc. Think about times you were limited in the amount or kind of activities you could do and times you accomplished less than you

would like. If HEALTH PROBLEM affected your activities only a little, choose a low number. Choose a high number if HEALTH PROBLEM affected your activities a great deal.

Consider only how much HEALTH PROBLEM affected your ability to do your regular daily activities, other than work at a job.

HEALTH PROBLEM had no effect on my daily activities	_____	HEALTH PROBLEM completely prevented me from doing my daily activities
	0 1 2 3 4 5 6 7 8 9 10	

CIRCLE A NUMBER

Original Source: WPAI:GH V2.0 (US English) - (Reilly, Zbrozek, & Dukes, 1993)

Appendix 4: ETHICAL REVIEW AND APPROVAL DOCUMENTS



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19675 Code 00202
Telegrams: varsity
Tel: (254-020) 2726300 Ext 44355



KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 726272
Telegrams: MEDSUP, Nairobi

KNH-UoN ERC

Email: uonknh_ero@uonbi.ac.ke
Website: <http://www.erc.uonbi.ac.ke>
Facebook: <https://www.facebook.com/uonknh.erc>
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

Ref: KNH-ERC/A/122

5th April 2021

Aggrey Criema
Reg. No. H57/7668/2017
School of Public Health
College of Health Sciences
University of Nairobi



Dear Aggrey

RESEARCH PROPOSAL – INFLUENCE OF BODY MASS INDEX ON WORK PRODUCTIVITY AMONG HEALTHCARE WORKERS IN KENYATTA NATIONAL HOSPITAL (P99/ 02/2021)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above research proposal. The approval period is 8th April 2021 – 7th April 2022.

This approval is subject to compliance with the following requirements:

- Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.
- Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
- Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
- Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
- Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
- Submission of an executive summary report within 90 days upon completion of the study.

This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

Protect to discover



REPUBLIC OF KENYA



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: 283927

Date of Issue: 20/April/2021

RESEARCH LICENSE



This is to Certify that Mr. Aggrey Oriema of University of Nairobi, has been licensed to conduct research in Nairobi on the topic: Influence of Body Mass Index on work productivity among healthcare workers in Kenyatta National Hospital, Kenya for the period ending : 20/April/2022.

License No: NACOSTIP/21/9999

283927

Applicant Identification Number

W. Mutembo

Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code



NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

Appendix 5: SIMILARITY INDEX REPORT

28/11/2023
2023 by Nyantim

Appendix 5: SIMILARITY INDEX REPORT

10:42:16 PM Turnitin - Originality Report - FACTORS ASSOCIATED WITH SICKNESS PREVALENCE AMONG HEALTHCARE WORKERS

Turnitin Originality Report

Document ID: 2-104-2023-01-01-01
 ID: 2023010101
 User: Admin 4001
 Submitted: 1

Similarity Index	Similarity Source
7%	Internet Sources: 7% Bibliography: 0% Matched Pages: 0%

FACTORS ASSOCIATED WITH SICKNESS PREVALENCE AMONG HEALTHCARE WORKERS AT HENTYATA NATIONAL HOSPITAL, NERYA By Aggrey-Otieno

1. Yvonne "Theora" Maritza Rodriguez, Publisher Alejandro Tello, Hospital Santa Maria: "Risk at work: prevalence and interventions among healthcare workers, systematic literature review: an evidence-based cross-sectional study", *Annals of Occupational and Environmental Medicine*, 2018

2. Jyoti S. Chitambar, Publisher Anjali Mahajan: "Prevalence of mental health issues among healthcare workers: a systematic literature review", *Journal of Occupational Health*, 2018

< 13% match (Document from 12-Jun-2023)
<https://www.researchgate.net/publication/368484794>

< 13% match (Document from 29-Jun-2023)
<https://www.researchgate.net/publication/368484794>

< 12% match (Document from 04-May-2022)
<https://www.researchgate.net/publication/358700521>

< 9% match (Document from 20-Jun-2023)
<https://www.researchgate.net/publication/368484794>

< 9% match (Document from 05-Jun-2023)
<https://www.researchgate.net/publication/368484794>

< 7% match (Document from 04-Jun-2023)
<https://www.researchgate.net/publication/368484794>

< 7% match (Document from 16-Jan-2023)
<https://www.researchgate.net/publication/368484794>

< 4% match (Document from 15-Apr-2023)
<https://www.researchgate.net/publication/368484794>

< 1% match (Document from 16-Mar-2023)
<https://www.researchgate.net/publication/368484794>

< 1% match (Document from 02-Nov-2022)
<https://www.researchgate.net/publication/368484794>

< 1% match (Document from 09-Sep-2021)
<https://www.researchgate.net/publication/368484794>

< 1% match (Document from 17-Jul-2021)
<https://www.researchgate.net/publication/368484794>

< 1% match (Document from 07-Mar-2021)
<https://www.researchgate.net/publication/368484794>

< 1% match (Document from 21-Feb-2021)
<https://www.researchgate.net/publication/368484794>

< 1% match (Document from 20-Feb-2021)
<https://www.researchgate.net/publication/368484794>

< 1% match (Document from 12-Dec-2021)
<https://www.researchgate.net/publication/368484794>

< 0% match (Document from 18-Jan-2022)
<https://www.researchgate.net/publication/368484794>

< 0% match (Document from 23-Sep-2021)
<https://www.researchgate.net/publication/368484794>

< 0% match (Document from 27-Sep-2021)

28/11/2023 52



UNIVERSITY OF NAIROBI
 FACULTY OF HEALTH SCIENCES
 P. O. BOX 95519 - 00102,
 NAIROBI
 TEL: 011-254519364
 DEPT. OF PUBLIC & GLOBAL HEALTH