

## Article

# The role of stress and level of burnout in job performance among nurses

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## ABSTRACT

Nurses' empathy for and connection with patients demonstrates core professional values which are essential but, consequently, attract certain factors capable of inducing stress. Studies of the roles and responsibilities associated with nursing have implicated multiple and conflicting demands which might not be without some resultant effects. However, little research has been conducted on these work characteristics in developing economies to determine how these might impact the nurse employees' performance. There is need for evidence-based empirical findings to facilitate improvement in healthcare services. This study examined stress and level of burnout among Nigerian nurses ( $n = 2245$ ) who were selected using stratified random sampling. The participants were measured using an 'abridged measures booklet' adopted from the Maslach Burnout Inventory-General Survey (MBI-GS), Job Autonomy Questionnaire (JAQ), Questionnaire on Organisational Stress-Doetinchem (VOS-D) and Job Diag-

nostic Survey (JDS). The roles of work-home interference (WHI) and home-work interference (HWI), with respect to work characteristics and burnout (paying special attention to gender), were examined. Analyses using *t*-tests and linear regression showed no gender differences in burnout levels among Nigerian nurses, who experience medium to high levels of emotional exhaustion, medium levels of depersonalisation and high levels of personal accomplishment. WHI and HWI were found to mediate the relationship between work characteristics and burnout. The meditational relationship differs between genders. This study calls for further research into gender and burnout among the caring professions, especially in under-developed and developing economies of the world.

**Keywords:** job performance, nurses and professional values, stress and burnout

## Introduction

### Background

In terms of broad behavioural construct, the general taxonomy of job performance includes 'assessment

of the performances, analysis of job demands, and method of job elements'.<sup>1,2</sup> A model of job performance that takes into account the multifaceted nature of the job and then separates the various elements

subsumed under that rubric makes fundamental distinctions between:

- aspects of work evaluation that are under the control of the worker (behaviours involved in job performance itself)
- aspects that are not under the control of the worker (the consequences or effectiveness of job performance)
- aspects that deal with relative costs (productivity)
- aspects that show the value placed on each by the organisation (utility).

The workers' behaviour, job effectiveness, productivity and utility have inherent consequences. Hence, factors capable of inducing stress might include catastrophes, major life changes and daily hassles, among others.<sup>3,4</sup> Catastrophes such as a sudden life-threatening calamity (or disaster) that push people to the outer limits of their coping capability are stressful. The death of a loved one, loss of a job, divorce, imprisonment, disability or illness are also sources of stress. Daily hassles associated with relational disorders, unfriendly environments, poverty, academic pursuits and work-related issues also precipitate a great deal of stress. Work-related stress can impact on an organisation in many ways, including workplace and work-team relations, productivity, quality, absenteeism, employee turnover, accidents, and customer and client complaints.

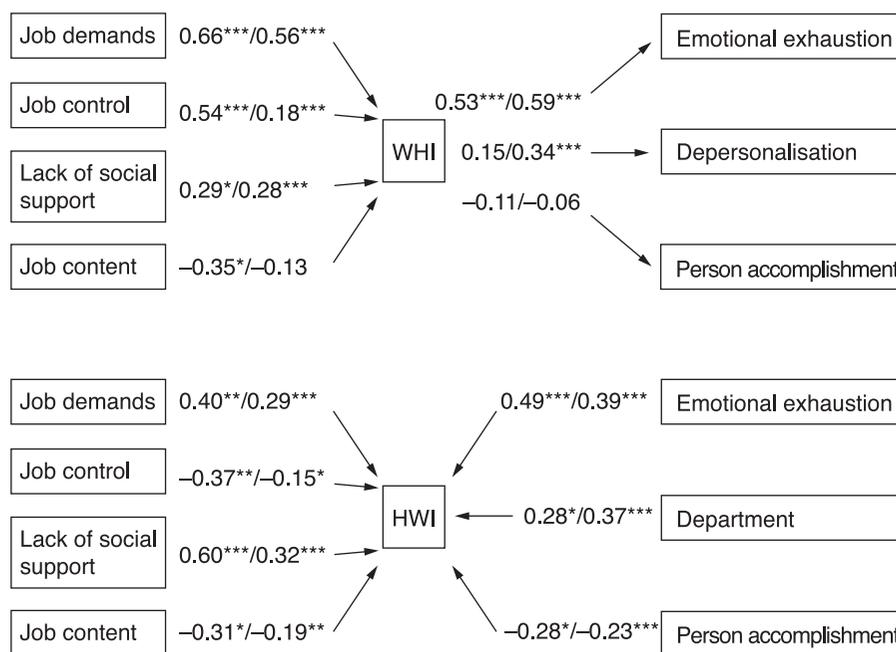
Context (organisational culture and function) and content (work environment and equipment) are crucial in determining the experience of work-

related stress. Employees, such as nurses who are members of a noble and caring profession, working in service provision, are at particular risk.<sup>5-8</sup> They seem to be particularly affected by work-home interference (WHI) and home-work interference (HWI). Changes in family structures, the increasing participation of women in the workforce and technological changes that enable job tasks to be performed in a variety of locations have blurred the boundaries between work and home life. For many workers, this has created the potential for interference or conflict to occur between their work and non-work lives. Nurses' empathy for and connection with patients demonstrates five core professional values that attract factors capable of inducing stress. Thus, nursing is associated with multiple and conflicting demands, imposed by patients' needs and family demands, which might not be without some resultant effects.

## Conceptual and theoretical framework

### Stress and burnout

The conceptual framework of this study is grounded in the perceived stress effect and the job demands-resources (JD-R) model.<sup>9,10</sup> Considering the important role of WHI/HWI mentioned previously, its mediating role was also added to this research model (Figure 1). Throughout its history as a psychological construct, stress has proven to be relatively complicated and has led to some confusion. It is conceptualised here according to the mechanical principles



**Figure 1** The concept model of the relationship between work characteristics, work-home interference/home-work interference on burnout

of load or external force and the area upon which that force is exerted. The damage or deformity resulting from both the load and the force is referred to as strain. From this perspective, stress signals danger and prepares us to take defensive action. For example, the fear of things that pose a realistic threat motivates us to deal with them or avoid them. Stress fuels creativity and motivates us to achieve. But excessive stress leads to less co-operation, more aggression and even hinders performance on difficult tasks.

Psychologists viewed stress in three ways: as a stimulus, as a response and as an ongoing interaction between the organism and its environment. We refer to stress as a stimulus when we make statements such as 'I have a lot of stress in my life right now, I have three examinations next week', or 'my car broke down'. When stress is a response that has cognitive, physiological and behavioural components, the person might say 'I am feeling all stressed out', 'I am tensed up' or 'I am having trouble concentrating on things'. A combination of stimulus and response conceptualises the person-situation interaction, which explains stress as an ongoing transaction between the organism and the environment.<sup>7,11</sup> From this perspective, stress can be defined as a pattern of cognitive appraisal, physiological responses and behavioural tendencies that occurs in response to a perceived imbalance between situational demands and the resources needed to cope with them.

Excessive or unbearable stress leads to a situation of burnout. The term 'burnout' was first coined by Freudenberger<sup>12</sup> who, in his *Staff Burnout*, defined it as 'the signs and symptoms characterised by loss of energy and feelings of life being broken into pieces', presumably based on the 1960 novel *A Burnt-Out Case* by Graham Greene, which describes a protagonist suffering.

Maslach and Leiter<sup>13</sup> defined burnout as 'a sustained response to the chronic work stress comprising of three components: the experience of being emotionally exhausted (emotional exhaustion), negative feelings and attitudes towards the recipients of the service (depersonalisation) and feelings of low accomplishment and professional failure (lack of personal accomplishment)'. Burnout is a prolonged response to chronic emotional and interpersonal stressors that an employee encounters in the context of a job.<sup>13,14</sup> According to the Merriam Webster Dictionary, burnout is defined as exhaustion of physical or emotional strength or of motivation usually as a result of prolonged stress or frustration. Here, 'burnout' is a psychological term referring to the experience of long-term exhaustion and diminished interest. However, it is not a recognised disorder in the DSM, although it is recognised in

the ICD-109 as 'Problems related to life-management difficulty'. It also refers to feelings of physical and emotional exhaustion, due to stress from working with people under difficult or demanding conditions. Burnout is followed by signs such as chronic fatigue, quickness to anger and suspicion, and susceptibility to colds, headaches and fevers.

Maslach and her colleague, Michael Leiter, defined the antithesis of burnout as engagement characterised by energy, involvement and efficacy, the opposites of exhaustion, cynicism and inefficacy.<sup>15</sup> Many theories of burnout include negative outcomes related to burnout, including job function (performance, output, etc.), health-related outcomes (increases in stress hormones, coronary heart disease, circulatory issues) and mental health problems (depression, etc.). The Maslach Burnout Inventory uses a three-dimensional description of exhaustion, cynicism and inefficacy.<sup>16</sup> Some researchers and practitioners have argued for an 'exhaustion only' model that sees this symptom as the hallmark of burnout.<sup>10</sup>

Burnout is simply the condition of a person who has become very physically and emotionally tired after doing a difficult job for a long time. The synonyms of burnout include fatigue, collapse, exhaustion, frazzle, lassitude, prostration, tiredness and weariness, while the antonyms include refreshment, rejuvenation, rejuvenescence and revitalisation. How stress is processed determines how much stress is felt and how close a person is to burnout. An individual can experience stressors but be unable to process the stress well and thus experience burnout. Another person can experience a significant number of stressors, but process each well, and avoid burnout. How close a person is to a state of burnout can be determined through various tests.<sup>2,11</sup>

Burnout is reflected in pathological emotional depletion and maladaptive detachment that is a secondary result of exposure to prolonged occupational stress. The three dimensions include emotional exhaustion, depersonalisation and reduced personal accomplishment. Psychologists (particularly Herbert Freudenberger and Gail North) have theorised that the burnout process can be divided into 12 phases, which are not necessarily followed sequentially or are in any sense relevant or exist other than as an abstract construct.<sup>17,18</sup>

- The Compulsion to Prove Oneself. Often found at the beginning of burnout is excessive ambition, the desire to prove oneself while at the workplace. This desire turns into determination and compulsion. It leads an individual to show off to their co-workers, proving that they are doing an amazing job and that they are doing better than all others.<sup>17,18</sup>

- Working Harder. Because they have to prove themselves to others, people establish high personal expectations. In order to meet these expectations, they tend to focus only on work while they take on more work than they usually would. With their main focus on work, they become obsessed with doing everything themselves. This will show that they are irreplaceable since they are able to do so much work without enlisting the help of others.<sup>17,18</sup>
- Neglecting Their Needs. Since they have devoted everything to work, they now have no time for anything else. Friends and family, eating and sleeping start to become unnecessary or unimportant. In order to make themselves feel better about neglecting these necessities, they tell themselves that these are just sacrifices that will prove that they are the best.<sup>17,18</sup>
- Displacement of Conflicts. Now, the person has become aware that what they are doing is not right, but they are unable to see the source of the problem. Dealing with the root cause of this might lead to a crisis in themselves and become threatening. This is when the first physical symptoms are expressed.<sup>17,18</sup>
- Revision of Values. At this stage, people isolate themselves from others, they avoid conflicts, and fall into a state of denial towards their basic physical needs. They also look at their value systems, and friends/hobbies are no longer important. Their new value system is their job and they start to become emotionally blunt.<sup>17,18</sup>
- Denial of Emerging Problems. Now seeing their co-workers as dumb, lazy and demanding of them, the person begins to become intolerant. They do not like being social, and if they were to have social contact, it would be unbearable. Outsiders tend to see more aggression and sarcasm. The person blames their increasing problems on time pressure and all they work that they have to do, but they do not blame their problems on the ways that they have changed themselves.<sup>17,18</sup>
- Withdrawal. Social contacts are minimised and isolation maximised. Alcohol or drugs may be sought out for a release because the person is obsessively working 'by the book'. Their feelings are those of being without hope and direction.<sup>17,18</sup>
- Obvious Behavioural Changes. Co-workers, family, friends and others that are in their immediate social circle cannot overlook the behavioural changes in this person. The person has become apathetic, fearful and shy.<sup>17,18</sup>
- Depersonalisation. Losing contact with themselves, they no longer see humans as valuable. They no longer see personal needs. Their view of life narrows to only seeing the present time, while their life turns to a series of mechanical functions.<sup>17,18</sup>
- Inner Emptiness. They are empty inside and to overcome this, they turn to activities such as sex, alcohol or drugs. These activities are exaggerated and overreacted. They start to think that their leisure time is dead time.<sup>17,18</sup>
- Depression. Burnout and depression correspond easily. The person is becoming exhausted, hopeless, indifferent and believes that there is nothing for them in the future. To them, there is no meaning to life. Typical depression symptoms arise.<sup>17,18</sup>
- Burnout Syndrome. Suicidal thoughts pass through the person's mind as an escape from their situation, although only a few people will actually commit suicide. They collapse physically and emotionally and should seek immediate medical attention.<sup>17,18</sup>

### *Nursing roles and professional values*

The term 'role' is borrowed by social scientists from drama. In its theatrical context, role refers to a person pretending to be someone else for the purposes of entertainment. This implies a certain deception and is not the way in which 'role' is used in the phrase the 'nurse's role'. It is acceptable to say that 'role' is a term applied to human behaviour, based on the fact that human beings behave within certain relatively predictable patterns.<sup>19</sup> Role is a descriptive term for relatively predictable behavioural patterns. Wai<sup>19</sup> inferred that the nursing role refers to all behaviours that are considered appropriate for a nurse. The nurse's role might be described in terms of the historical images of the nurse. Kato<sup>20</sup> identifies three historically traditional images that still influence the nursing profession, which Gandhi and colleagues<sup>1</sup> summarised as follows.

- The folk image of the nurse as 'mother' arises from the original use of the word 'nurse' to mean suckling the young. This meaning quickly broadened to cover caring for the sick and the aged. Such care was provided by simple methods passed on from one person to another. The folk image, which is still held in some quarters today, is an emotional view of the nurse as 'mother: gentle, kind, always available, nurturing life by natural means, wise but not learned'.<sup>1</sup>
- Care of the sick has always been seen as a Christian duty in Western civilisation. Thus, the Church viewed caring for the sick as important for the salvation of the soul of the caregiver. Over the centuries, this religious image reinforced the characteristics of the folk image, because it

suggested that nursing should be done for love and required no formal learning. Other notions were the beliefs that a nurse should be celibate, cloistered, unworldly and strictly disciplined.<sup>1</sup>

- The servant image arose between the 16th and 19th centuries; the dark ages in nursing history. During this time, illness was seen as a punishment for sin and the care, if any, given to the sick was far from charitable. Any nursing that was available generally was given by ill-paid, ignorant and, sometimes, immoral women.<sup>1</sup>
- Roles, however, have to be learned by the instrumentality of socialisation which occurs in intentional learning and/or incidental learning. A nurse is socialised intentionally through the formalised education and experiences received during training programmes. Incidental learning or socialisation occurs through more casual interactions within the healthcare system and other relevant outfits. Nursing is synonymous with caring which encompasses empathy for and connection with people. Despite the expanded roles (practitioner, clinician, clinical specialist and others), the professional nurse is at times in situations that pose ethical and or moral conflict.<sup>1</sup>
- Nursing is a caring profession, and the caring encompasses empathy for and connection with people. Caring is best demonstrated by a nurse's ability to embody the five core values of professional nursing:<sup>21,22</sup> human dignity, integrity, autonomy, altruism and social justice. The caring professional nurse integrates these into in clinical practice.

Each nurse is considered to be committed to professional core values by aspiring to be an ideal nurse, always being patient and kind. However, the need to deal with patients' needs (especially those of non-compliant patients), upset family members and other staff members sometimes poses a great challenge. Hence, nursing is a challenge! Nurses understand that ongoing changes in the healthcare system demand the application of professional core values, as well as the need for life-long learning to keep their knowledge and skills up to date. The core values, as explained by Fahrenwald<sup>21</sup> and Frisch,<sup>22</sup> are described as follows:

- The term 'dignity', according to the *Oxford Encyclopaedic English Dictionary*, refers to 'the state of being worthy of honour or respect'. When this concept is associated with the adjective 'human', it is used to signify that all human beings possess inherent worth and deserve unconditional respect, regardless of age, sex, health status, social or ethnic origin, political ideas, religion or criminal history. In nursing, you are

taught to treat all patients with dignity, you are to treat each person as equal and not refuse care to anyone regardless of their past or other factors. You treat each patient as you would treat your own loved ones if you were to care for them.<sup>21,22</sup>

- Integrity is the basing of one's actions on an internally consistent framework of principles. Nurses have set values of integrity and they work together as a whole with others to benefit everyone involved. Nurses also behave honestly, fairly and ethically. They are truthful, trustworthy and fair in all efforts, while holding themselves to the highest standards of professional and ethical conduct. Nurses provide an environment of openness; they are honest in their approach to one another and those they serve.<sup>21,22</sup>
- Autonomy (Greek: Auto-Nomos where nomos means 'law': one who gives oneself his/her own law) is the right to self-government. Autonomy in nursing gives patients a right to informed consent. The patient is given the facts and consequences of their health choices and has the right to choose to go through with a procedure or not (unless a person is declared incompetent and then a medical power of attorney or healthcare surrogate is appointed to them to make decisions).<sup>21,22</sup>
- Altruism refers to selfless concern for the welfare of others. Every day, nurses put their own lives in danger to care for sick and dying patients. Nurses are ethically required to take care of patients, sometimes risking their own safety and health in the process. Nurses must put the welfare of their patients first.<sup>21,22</sup>
- Social justice refers to the concept in which justice is achieved in every aspect of a society, rather than merely in the administration of law. Nurses are required to uphold freedom of choice in their patients' care, while upholding their dignity.<sup>21,22</sup>

The nurse is a 'client advocate' who protects the human and legal rights of patients, based on their cultural and religious affiliations.<sup>20,21,23</sup> The nurse is a 'care giver', helping the patient regain health through the process of healing. The nurse is also the pivot of all communications in the healthcare delivery system. A nurse, by professional calling, is constantly in situations that pose ethical and or moral conflict. The Right to Life is the cornerstone of all human rights law and, a nurse, by duty, has to strive to safeguard the life of every person seeking or under health care.

## Statement of the problem

Kato<sup>20</sup> defined nursing with an emphasis on '... client's self-care needs which is a learned goal-oriented activity directed towards the self in the interest of maintaining life, health, development and well being'. The role of nursing is associated with multiple and conflicting demands imposed by nurse supervisors/managers, as well as medical and administrative staff, which might lead to work overload and or role conflicts.<sup>19,23</sup> A study among nurses in two hospitals showed that their personal and professional values play an important role in the degree of burnout they experience. According to Wai,<sup>19</sup> 'every day the nurse confronts stark suffering, grief and death as few other people do'. Wai believed that many nursing tasks are mundane and unrewarding while many are, by normal standards, distasteful. 'Others', he said, 'are often degrading and some are simply frightening'. Stress-related work problems are on the increase among caring professions, such as nursing, in developing societies.<sup>19</sup>

To date, little research has been conducted on work characteristics and their effects on employee performance in developing countries like Nigeria. Considering that individuals in developing economies experience continuous and prolonged stress (e.g. related to political instability, civil unrest and resource mismanagement), it is particularly useful to see how these citizens (including Nigerians) cope in terms of work and stress. Wai<sup>19</sup> observed that the nursing profession has not been openly appreciated in Nigeria despite its positive impacts on the lives of Nigerians. On that premise, it has become commonplace to examine the role of stress on job performance with particular reference to nurses in Nigeria.

## Purpose and objectives

The main purpose of this study was to investigate the role of stress and level of burnout (if any) associated with nurses' job performance. Thus, the research objectives include:

- to assess the prevalence of burnout
- to examine the role of work characteristics
- to determine work-home and home-work interference regarding burnout for Nigerian male and female nurses.

## Research hypotheses

The study hypothesised that:

- H1: Burnout prevalence among nurses in under-developed and developing economies is high due to the high workload.

- H2: Women score higher on emotional exhaustion, whereas men score higher on depersonalisation.
- H3: Job demands are primarily related to emotional exhaustion, whereas job resources are primarily related to depersonalisation and personal accomplishment.
- H4: Both WHI and HWI are higher for women than for men.
- H5: Both WHI and HWI mediate the relationship between work characteristics and burnout outcomes, and this meditational effect is stronger for women.

## Methods

### Study setting and population

The study was conducted among nurses in selected states of Nigeria. Considered the most populated black race country in the world, and situated in sub-Saharan West Africa, Nigeria has a population of 150 million. The country has a federal capital territory (FCT) and 36 states which are categorised into six geopolitical zones namely northeast, north-central, northwest, southwest, south-south, southeast. Nigeria houses a good number of hospitals/health centres, variously owned by federal government, state governments, local governments, companies, corporate organisations and private entrepreneurs. During the period of study, there were 210 306 practising registered nurses (RNs) in Nigeria, including those employed by federal government, state government, local government, companies, corporate organisations and private hospitals/clinics. These nurses consisted of males and females, as well as Christians and Muslims.

### Research design

The research was an exploratory study in which the 'role of stress and level of burnout' was the independent variable and 'nurses' job performance' was the dependent variable.

### Research assistants

Research assistants ( $n = 5$ ) were recruited in each study hospital to facilitate the smooth running of the study. Research assistants included the hospital's registry staff, social welfare officers and psychologists, as applicable.

## Participants and sampling techniques

Of the 210 306 nurses in Nigeria, 2245 were selected as study participants using stratified random sampling from the six geopolitical zones. The participating states were Bauchi State ( $n = 373$ ; northeast), Plateau State ( $n = 374$ ; north-central), Kaduna State ( $n = 375$ ; northwest), Lagos State ( $n = 375$ ; southwest), Cross River State ( $n = 373$ ; south-south) and Enugu State ( $n = 375$ ; southeast). In all participating states, the variables or factors considered in the sampling stratification techniques were gender (sex) and religion. Hence, the participants consisted 598 male and 521 female Christians ( $n = 1119$ ), 520 male and 595 female Muslims ( $n = 1115$ ), and seven male and four female others ( $n = 11$ ) (African Traditional Religion).

## Instruments and measurements

The best studied measurement of burnout in the literature is the Maslach Burnout Inventory.<sup>13,24</sup> Maslach and Jackson first identified the construct 'burnout' in the 1970s, and developed a measure that weighs the effects of emotional exhaustion and reduced sense of personal accomplishment.<sup>16</sup> This indicator has become the standard tool for measuring burnout. Burnout was measured using the Maslach Burnout Inventory-General Survey<sup>24,25</sup> version which contained 22 items and three scales. Emotional exhaustion was measured by ten items ( $\alpha = 0.89$ ), depersonalisation by five items ( $\alpha = 0.68$ ) and reduced personal accomplishment by seven items ( $\alpha = 0.75$ ). Previous research has shown that the reliability of the depersonalisation score is usually low.<sup>14,17,26</sup> Responses were made on a six-point scale (0 = never, 6 = every day).

Workload was measured by an eight-item scale ( $\alpha = 0.87$ ) based on the Job Autonomy Questionnaire.<sup>7,11,16</sup> Participants indicated their agreement with each item on a four-point scale (1 = never, 4 = very often). Job control was measured by four items ( $\alpha = 0.72$ ) of the Inventory of Feelings of Motivation and Demotivation. Responses were made on a four-point scale (1 = not at all, 4 = very much). WHI and HWI were assessed via two scales consisting of 13 items. WHI was measured by seven items ( $\alpha = 0.90$ ). HWI was assessed by six items ( $\alpha = 0.84$ ). Respondents answered using a five-point scale (1 = never, 5 = always).

Social support was measured by three five-item scales deducted from the Questionnaire on Organisational Stress-Doetinchem (VOS-D), each assessing the social support received from supervisor/colleague, partner and family/friends. The scores on three subscales were averaged to yield a sum

score. The reliability of the scale was good ( $\alpha = 0.82$ ). Items were rated on four-point scales (1 = never, 4 = always).

Work content was assessed via five items based on the Job Diagnostic Survey.<sup>2,6,7</sup> The scale ( $\alpha = 0.82$ ) was based on a four-point answer (1 = never, 4 = very often).

## Data collection procedures

The study was conducted after observing the following research procedural protocols.

Approval for the study was sought from and granted by the respective study hospitals in all participating states.

Initially, proposed participants were sampled from the study population with the aid of their respective personal files, which were accessible from the registry of study hospitals in each participating state. These personal files contain relevant particulars and the personal data of individual nurses. First, registry staff sorted the files, in confidence, according to sex/gender of the nurses. The researchers blindly selected a number of files from each category (male and female) of the sex/gender stratification. Using the file-sorting technique, 2300 nurses were listed as proposed participants. Thereafter, registry staff retrieved and resorted the files of the 2300 nurses based on belief systems/religious affiliations which included Islam, Christianity and others (African Traditional Religion). Again, the researchers randomly selected a number of files (using a specific ratio) based on the overall available number of files in each category.

Nurses and study hospitals in each participating state were briefed and given appropriate orientation on their participation. Not all 2300 proposed participants actually took part in the study because 55 nurses declined at the point of signing informed consent. The actual number of study participants was 2245 nurses who signed individual informed consent for participation.

Appropriate administration, retrieval and collation of the instruments were facilitated by research assistants.

Study participants were debriefed and thanked following their full participation.

Individual research assistants were thanked for their help in participant selection and collation of the retrieved instruments and measures.

The researchers coded all data resulting from the collated instruments and measures.

## Results

### Data analysis

The preliminary analyses used M, SD and Pearson's correlations for the subgroups of male and female. In order to answer the first research question regarding gender differences in the level of burnout, independent sample *t*-tests were performed. The cut-off points for different levels of burnout were obtained from the Utrechtse Burnout Schaal (UBOS) manual.<sup>3</sup> The second research question about the relationship between work characteristics and burnout was answered by means of linear hierarchical regression analyses. Because of the high multicollinearity of WHI and HWI, separate analyses were carried out for these variables. The mediating role of WHI and HWI was assessed using the recommended method of analyses.<sup>24,26</sup> The authors stipulate that the best method to assess the mediating role of a variable is by checking whether paths from predictor to intervening variable and from intervening variable to outcome variable are both significant (Table 1). If so, then the intervening variable is a mediator of the relationship. This method has the most power and most accurate Type I error rates compared with other mediation tests.<sup>24,26</sup> All analyses were performed using SPSS v. 15.01.

### Preliminary analyses and burnout prevalence among men and women

Emotional exhaustion experienced by Nigerian nurses was medium to high and depersonalisation was medium. At the same time, nurses felt they were doing their job very well, having, on average, high levels of personal accomplishment. Thus, H1 was partially confirmed (Table 1). H2, regarding gender differences and burnout, was not confirmed because no significant gender differences were detected. There was, however, a trend for women to experience more emotional exhaustion, higher depersonalisation and higher personal accomplishment than men.

### Direct relationships between work characteristics, gender and burnout

The predicted stronger relationship between job demands and emotional exhaustion (H3) than between job resources and emotional exhaustion was confirmed only for women. For men, job resources and job demands play an equally important role in determining levels of emotional exhaustion (Figure 1

and Table 2). The predicted stronger relationship between job resources and depersonalisation (H3) than between job demands and depersonalisation was confirmed only for men. For women job demands and job resources contribute equally to depersonalisation. For men, the variance accounted for by job characteristics is higher than for women, suggesting that other variables play a more important role in predicting depersonalisation in women. The predicted stronger relationship between job resources and personal accomplishment (H3) than between job demands and personal accomplishment was confirmed for both men and women. However, for men, work characteristics accounted for greater portion of variance (19%) than for women (8%). This implies that, for women, variables other than work characteristics are more important in accounting for levels of personal accomplishment (Figure 2).

### Role of WHI and HWI

H4 regarding higher levels of WHI/HWI among women could not be confirmed. No statistically significant gender differences regarding overall levels of WHI/HWI were found. Mean levels of WHI were higher than HWI levels for both genders. Subanalyses (not shown) revealed that 20.7% of men and 30.8% of women experienced WHI at least occasionally, while the same analyses for HWI revealed the prevalence of 5.2% for men and 5.1% for women.

The results regarding mediating effects of WHI and HWI between work characteristics and burnout outcomes are presented in Figure 2. For men, WHI mediates the relationship between work characteristics and emotional exhaustion. The strongest positive association of WHI was with job demands and the strongest negative association with job control. No mediating role was found regarding depersonalisation and personal accomplishment. For women, WHI mediates the relationship between work characteristics and emotional exhaustion and depersonalisation. The strongest positive association found was between job demands and WHI, and the strongest negative association was between job control and WHI. No mediating role of WHI between work characteristics and personal accomplishment was found.

In both male and female nurses, HWI mediates the relationship between work characteristics and all three burnout variables. For men, lack of social support is most strongly related to HWI, which in turn has the strongest association with emotional exhaustion. The same pattern is found among female nurses, but the strength of the relationship is

**Table 1** Descriptive characteristics and correlations between variables for males (top right-hand corner) and females (bottom left-hand) corner

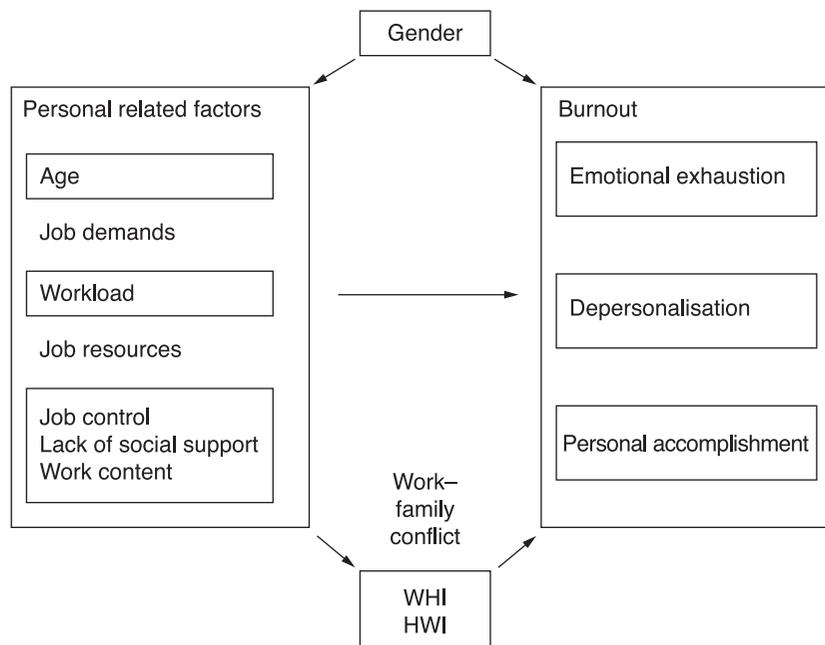
Variable	Mean	SD	Mean	SD	t-test	1	2	3	4	5	6	7	8	9	10
Age (years)	47.43	10.16	47.38	8.48	0.03	1	-0.01	-0.22**	0.03	-0.04	-0.02	0.14**	0.11*	0.01	-0.05
Emotional exhaustion	2.25	1.33	2.51	1.30	1.42	-0.01	1	0.44**	-0.12	0.60**	-0.23**	-0.21**	0.27**	0.56**	0.33**
Depersonalisation	0.63	0.65	0.75	0.92	0.75	-0.22**	0.44**	1	-0.24**	-0.27**	-0.07	-0.19**	0.18**	0.29**	0.34**
Personal accomplishment	5.10	1.06	5.18	0.81	-0.63	0.03	-0.12*	-0.24**	1	-0.04	0.19**	0.31**	-0.18**	-0.05	-0.21**
Job demands	2.83	0.58	2.93	0.60	-0.17	-0.04	0.60**	0.27**	-0.04	1	-0.14**	-0.08	0.13**	0.56**	0.29**
Job control	2.89	0.76	2.74	0.66	1.54	-0.02	-0.23**	-0.07	0.19**	-0.14	1	0.34**	-0.30*	-0.23**	-0.17**
Job content	2.89	0.73	2.92	0.58	-0.34	0.14**	-0.21**	-0.19**	0.31**	-0.08	0.34**	1	-0.32**	-0.15*	-0.19**
Lack of social support	1.66	0.37	1.75	0.40	-1.55	0.11**	0.27**	0.18**	-0.18**	0.13*	-0.30**	-0.32**	1	0.27*	0.34**
WHI	2.42	0.85	2.58	0.80	-1.35	-0.01	0.56**	0.30**	-0.05	0.56**	-0.23**	-0.15**	0.27**	1	0.59**
HWI	1.65	0.58	1.68	0.61	-0.44	-0.05	0.33**	0.34**	-0.21**	0.29**	-0.17**	-0.19**	0.34**	0.59**	1

Note: \*\* $P < 0.01$  (two-tailed); \* $P < 0.05$  (two-tailed). Missing values were handled by pairwise deletion.

**Table 2** Means, standard deviations, and correlations between the model variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1 WHI	2.15	0.81	-									
2 HWI	1.46	0.63	0.31	-								
3 Quantitative job demands	2.52	0.82	0.39	0.12	-							
4 Emotional job demands	1.71	0.71	0.29	0.17	0.46	-						
5 Mental job demands	2.97	0.82	0.22	0.14	0.63	0.48	-					
6 Quantitative home demands	2.26	0.78	0.21	0.27	0.32	0.30	0.39	-				
7 Emotional home demands	1.66	0.65	0.23	0.42	0.31	0.35	0.40	0.49	-			
8 Mental home demands	1.89	0.76	0.16	0.30	0.30	0.27	0.41	0.69	0.55	-		
9 Exhaustion	2.78	1.11	0.40	0.34	0.55	0.60	0.50	0.39	0.40	0.34	-	
10 Cynicism	2.49	1.19	0.22	0.33	0.22	0.30	0.23	0.31	0.30	0.28	0.64	-

Note: All correlations are significant at  $P < 0.01$ .



**Figure 2** The role of WHI and HWI among male and female nurses

weak. Thus, H5 was partially confirmed. WHI and HWI mediate the relationship between job characteristics and some burnout outcomes, but the relationship is stronger for men than for women.

## Discussion

The study assessed the level of burnout among nurses working in Nigeria. The issue of stress and

burnout have not been sufficiently explored in underdeveloped and developing economies like Nigeria. Hence, the role of WHI and HWI was also examined with respect to work characteristics and burnout, paying special attention to gender.

### Burnout prevalence and gender differences among nurses

The results regarding burnout levels in our study could be explained in terms of the JD-R model. The job demands among nurses were high (Table 1), and this was reflected in exhaustion due to work. However, job resources were also high, which buffered this negative role of job demands.<sup>9</sup> The lack of a significant gender difference regarding burnout might be because men and women in Nigeria have very similar working conditions. Africa has 2.3 healthcare workers per 1000 population, compared with the Americas, which have 24.8 healthcare workers per 1000 population. In Nigeria, there was an average ratio of 1 nurse to 30 patients in most hospitals during the period of this study. The tentative number of nurses ( $n = 210\ 306$ ) and the density per 1000 population ( $n = 0.28$ ) clearly highlights a somewhat unbearable workload for nurses in Nigeria, considering the country's population (150 million), especially when compared with other countries (Table 3).

Nursing shortages refer to a situation in which the demand for nursing professionals, such as RNs, exceeds the supply locally (within a given healthcare facility), nationally or globally. It can be

measured, for instance, when the nurse-to-patient ratio, nurse-to-population ratio or number of job vacancies necessitates a higher number of nurses working in health care than is currently available. This situation is observed in developed and developing nations around the world. The nursing shortage also affects developing countries that supply nurses who work abroad in wealthier countries.<sup>23,24</sup>

The nurses' empathy for and connection with patients demonstrate the five core professional values which are essential but, consequently, attract factors capable of inducing stress. Nursing is associated with multiple and conflicting demands, imposed by patients' needs, which can initiate and promote burnout. One explanation for this might be in terms of a high workload, having many patients (with varying needs) per nurse. However, the family and a wider socio-economic perspective might also play a role. According to Warg *et al*,<sup>27</sup> environmental, political and sociocultural forces have all contributed to the restructuring of work. Warg *et al* examined different types of job demands within the framework of a job control model which received critical attention with regard to the possible multifaceted nature of the job demands. High levels of exhaustion experienced among Nigerian nurses may be a reflection of accumulated tiredness from wider economic and political worries that nurses carry and that spills over into work, resulting in work-related exhaustion. The prevalence of personal accomplishment might be inherent when nurses often see clients generally recover quickly following their care.

**Table 3** Number of nurses and density per 1000 of the population for different countries

Country	Number of nurses	Density per 1000 of the population
Canada	309576	9.95
China	1358000	1.05
India	865135	0.80
Japan	993628	7.79
New Zealand	31128	8.16
Nigeria	210306	0.28
Philippines	127595	1.69
UK	704332	12.12
USA	2669603	9.37
Zimbabwe	9357	0.72

Source: Data from the World Health Organization (2006).<sup>29</sup>

## Direct relationship between 'work characteristics and burnout' outcomes

Job demands were associated with emotional exhaustion for both genders, which is in line with the JD-R model and the study hypothesis predicting a strong association between job demands and exhaustion.<sup>17,18</sup> However, for men, the link between job resources and emotional exhaustion was as important as that between job demands and emotional exhaustion, which contradicts the JD-R model. Depersonalisation was strongly related to job resources for men and only weakly for women.

Consequently, job demands were more strongly associated with women than men. That is probably because women have more elaborate support systems than men and so lack of emotional support regarding the work does not have much effect on them. Thus, when social support is lacking, men react by distancing themselves from patients, whereas women have other sources of support that buffer the lack of this type of support. Job resources (as predicted by the JD-R model) are associated with personal accomplishment.<sup>17,24</sup> There is a gender difference with regards to this component; with job resources playing a more important role in determining levels of personal accomplishment for men than for women. This is in line with an earlier study,<sup>28</sup> which found a different role for job resources in men and women in relation to burnout components.

It was found that levels of WHI are higher than levels of HWI. It appears that the boundary between work and home duties is more permeable than the boundary between home and work. Higher WHI might be a reflection of broader societal phenomena that values career success more than family harmony. Because WHI interferes with meeting family demands, it can be particularly strenuous for women, for whom family-related self-image is often an important part of their identity.

No gender differences were found regarding the levels of WHI/HWI. However, women in this study indicated being more in charge of home duties than their partners. Stemming from this, HWI for women would have been expected to be higher. One possible explanation might lie in women's more extensive social network, which ensures that childrearing duties do not spill-over into work. Furthermore, the fact that women did more chores at home might not interfere with work, but rather with free time and leisure activities. However, regarding the mediating role of WHI and HWI, some gender differences were noted. The strength of relationships between predictor variables and WHI/HWI as mediators were stronger for men than for women. This is surprising, considering that the sample size of males was much

smaller, which should have led to less power. This implies that for males, in particular, WHI/HWI are important mediators of relationship between work characteristics and burnout outcomes.

## Methodological considerations

This study has a number of limitations. Because we used a cross-sectional method of data collection, no causal relationships could be established and no insight is available into how the situation has developed since. No available data exist for burnout cut-off points in Nigeria. The cut-off points have not been standardised in a Nigerian sample to be used for effective interpretation of burnout levels in this study, therefore available cut-off points were opted for. It is better mild than never, meaning that 'it is better to use cut-off points standardised outside which may have just mild desired effect than not using any cut-off point at all. However, because cut-off points standardised using a Dutch sample were used, any interpretation regarding the level of burnout should be made with care, since a different threshold for burnout might be found in the Nigerian population. Lecic-Tosevski *et al*<sup>8</sup> advise in favour of using only nation-specific cut-offs. As these were unavailable, it was better to have some cut-off points as a potential indicator of the severity of the problem, rather than none at all.

## Implications of findings and suggestions for further research

The results of our study indicate a need to reduce the pace of work and the number of patients per nurse in Nigeria, in order to decrease workload, which should subsequently decrease emotional exhaustion. Decreasing work demands is especially beneficial for women, since for them the demands are linked both to exhaustion and distancing from clients. At the same time, improving available resources such as better social relations and more autonomy are important (especially for male nurses) because they are linked with all three burnout outcomes.

Because a complex bureaucratic healthcare system is the issue, such changes need to be incorporated at the wider policy level as well as at a micro-departmental level. Roughly, every third female and every fourth male nurse in our sample experienced WHI, at least occasionally. This group should be attended to, because WHI in women is directly associated with levels of exhaustion and distancing, and plays an important mediating role between work characteristics and emotional exhaustion in men. Low WHI is a protective factor against negative

work characteristics, whereas high WHI is an important risk factor. Thus, particular attention should be paid in the future to a public health policy that would enhance, as far as possible, a healthy work-life balance.

The HWI level in our sample was very low and at present is not an important concern for the employees. However, it is a predictor of burnout and its mediating role is very potent and should not be neglected. Should the level of HWI increase, for example, due to childcare-related needs or extended family caretaking duties, people are particularly vulnerable to the negative influence of job demands and lack of job resources. In this respect, no gender differences were observed, and both men and women are equally vulnerable. Gender differences in terms of the contribution of job demands and job resources to burnout subcomponents call for a gender-sensitive approach not only in research work, but also in the development of theoretical models. It might be that different models apply for the two genders. Thus, in future, it is advisable to develop and test gender-specific models that will provide better understanding of gendered expressions of health.<sup>12</sup>

## Conclusion

Considering the perceived implications of this study findings, there is a need for further studies with more representative samples and possible replications elsewhere. It seems acceptable to conclude that intervention studies will, in particular, help remedy inherent problems and or prevent them.

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#### ETHICAL CONSIDERATIONS

This study was facilitated by the University of Jos Psychological Services Center (PSC). Institutional approval was sought from and granted by the Emerging Researchers Alliance (ERA), the PSC University of Jos and the Research and Ethical Committee of each participating state. All participants were informed that their participation was voluntary, they were free to terminate participation at any point and that any data they provided would be treated confidentially. They therefore individually and willingly signed informed consent for participation.

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