# Determinants of Workplace Stress among Healthcare Professionals in Ghana: An Empirical Analysis

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**Abstract**

*There is considerable evidence that the stress inherent in health care negatively impacts health care professionals. Stress in medical practice has always been a topical issue. This is partly because medical service involves taking care of other peoples' lives therefore mistakes or errors could be costly and sometimes irreversible. It is thus expected that the medical doctors, nurses and other medical staff must be in a perfect state of mind devoid of morbid worries and anxieties. Our study examines the relationships between six key organisational factors (demand, control, support, relationships, change, and role conditions) and stress among healthcare professional in a teaching hospital in Ghana. The UK Health and Safety Executive's (HSE) Management Standards (MS) model of stress model was adopted and modified as our key measurement in our questionnaire. Data was collected from 453 healthcare professionals from a teaching hospital in Ghana.*
*Three sequential steps of using linear regression analysis to identify the causes of stress among a spectrum of human resource personnel, selected from all the main departments of the Komfo Anokye Teaching Hospital was outlined. Our study reveals that, all the six elements (demand factors, control factors, support factors, relationships factors, change factors and role factors) that have been analysed have significant impact on employees stress though, they do not impact on employees in the same measure. We noted that specialist physicians, general practitioners/family physicians, and registered nurses (excluding supervisors and head nurses) had a statistically elevated likelihood of work stress relative to other health care providers. We have provided policy direction to support stress management in healthcare settings such as the case of Komfo Anokye Teaching Hospital in Ghana.*

**Key Words:** Stress, healthcare personnel, demand factors, control factors, support factors, relationships factors, change factors, role factors

## *1. Introduction*

### 1.1 Background of Research

In Ghana, most health care is provided by the government and largely administered by the Ministry of Health (MOH) and Ghana Health Service (GHS). The healthcare system has five levels of providers: health posts which are first level primary care for rural areas, health centers and clinics, district hospitals, regional hospitals and tertiary hospitals. These programs are funded by the government of Ghana, financial credits, Internally Generated Fund (IGF), and Donors-pooled Health Fund. Hospitals and clinics run by the Christian Health Association of Ghana also provide healthcare (Ghana Health Service, 2013). There are over 200 hospitals in Ghana. Some for-profit clinics exist, but they provide less than 2% of health care services. Generally the Ghana Health Service (GHS) is undergoing enormous change, which has led to many primary health care professionals experiencing pressure beyond their control and ability to cope. Primary care in Ghana has taken on a new shape due to these changes and the members of the primary health care team are having to take additional responsibilities and working under tremendous pressure (Ministry of Health, 2012).

Because of these changes in operations, hospitals like most other industries that are going through changes have to deal with occupational stress that has become an issue of great concern over the last decade. It represents an important concern among healthcare workers due to its crucial contribution in attaining maximum job output and optimal quality of working life. According to the International Labour Organisation, almost 10% of work place accidents are related to stress hence the ability to effectively manage stress can help maintain organisation harmony (International Labour Organization-ILO, 2013). In the hospital most of the employee stress is caused by work overload, boring/repetitive duties, inadequate resources, physical environment (i.e. lighting, space, temperature, disruption etc), psychological working environment (i.e. verbal abuse, inappropriate behaviours), working long hours- forgoing lunch breaks and annual leave, people management issues, inadequate allocation of work, new technology, etc. (Somaz & Tulgan, 2003).

Faced with these difficulties of possible loss of manpower, a number of hospitals in Ghana are beginning to develop well documented policies on employee stress and its management particularly among the private hospitals where entrepreneurial culture has been well integrated into the provision of healthcare services. However there are differences among the policies. For some hospitals the employee health and safety is an integrated part of human resource policies while in the case of others it has been given autonomous attention due to its speciality (Mills, 1995). Some hospitals have prescribed ways that managers and unit heads should deal with stress cases from within while others have provided a road map to assist the individual deal with it outside the organisation. What is common amongst them is the fact that the objective of stress management policy is generally the same. They seek to among others minimise the risk of stress through a risk management process involving the identification, assessment and implementation of control measures to workplace stressor (Sedgeman, 2005).

In the existing literature, it is argued that stress rarely has a single source point, rather stress has been found to have many different sources. In addition, in this complex society stress influences many different areas of life. Stress can be caused by acute or chronic physical stressors, or by psychological and social stressors (Lehrer, et al., 2009). The majority of stressors tend to be those associated with psychological and social issues that are related to both personal and work lives. Ghana's public health sector is one of the areas where very little has been done about developing policies about stress management among its employees where medical or paramedical staff.

Even though some of the teaching and regional hospitals have initiated policies to manage stress among its employees, these initiates are without a long history hence requires continuous studies to explore the main causes of stress among the staff in order to consolidate these initiatives.

One of the most important hospitals in Ghana where measures are ongoing towards fully developing stress management strategy among its employees is the Komfo Anokye Teaching Hospital. It is Ghana's second most important hospital serving as referral hospital to other regions in Ghana and some parts of West Africa. This initiative is not without its own difficulties especially with identifying the actual sources and causes of stress for the different categories of employees. In the existing literature attempts at conceptualising the causes and management of stress are numerous but not all of them have been empirically tested to verify their validity and applicability (Adams, Darko, & Accorsi, 2004).

Our study examines the relationships between six key organisational factors (demand, control, support, relationships, change, and role conditions) and stress among healthcare professional in a teaching hospital Ghana (Abor, Abekah-Nkrumah, & Abor, 2008). This is in response to further studies to test alternative models of employee stress causes and management apart from the commonly used General Health Questionnaire which is fast becoming outmoded. If successful the research will help to discover the peculiarities of stress management in the hospital setting, reveal the work and non-work related factors that causes employee stress among workers, measure the strength of each stress factor thereby helping to device more tailor made approaches by hospitals to control them

We first review literature on the human resource profile of Komfo Anokye Teaching Hospital and stress management in healthcare sector. We then outline a sequential steps of using linear regression analysis to identify the causes of stress among a spectrum of human resource personnel selected from all the main departments of the Komfo Anokye Teaching Hospital. Next, we identify the source of data and then apply this exemplary ensemble model to stress among them and possible differences. We then discuss our results and outline the additional research directions for future work.

**1.2 History and Human Resource Profile of Komfo Anokye Teaching Hospital**

The Komfo Anokye Hospital is the second largest hospital in the country after the Korle Bu Teaching Hospital and the only tertiary health institution in the Ashanti region. It is the main referral hospital for the Ashanti, Brong Ahafo, Northern, Upper East and Upper West Regions. It is sited in a suburb called Bantama which is located in latitude 6° 42' 0N and longitude 1° 37' 60W with an altitude (meters) 254. According to KATH Report (2009), the location of the 1000 bed KATH, the road network of the country and commercial nature of Kumasi make the hospital accessible to all the areas that share boundaries with Ashanti Region and others that are further away. History has it that, in the 1940's there were two hospitals designated African and European Hospitals. As their names implied, the African side treated Africans while the European side treated European officials and their families. By 1952, the need to construct a new hospital to cater for the fast increasing population in Kumasi and therefore Ashanti-Region arose.

With reference to KATH Report (2006), the European Hospital was therefore transferred to the Kwadaso military quarters to make way for a new project. In 1954/55, a new hospital complex was completed and named the Kumasi Central Hospital but later changed to the Komfo Anokye Teaching Hospital after Okomfo Anokye, a legendary fetish priest of the Ashanti. It was converted into a teaching hospital in 1975 and affiliated to the medical school of the Kwame Nkrumah University of Science and Technology (KNUST). The hospital is also accredited for postgraduate training by the West Africa College of Surgeons in surgery, obstetrics and gynaecology, otorhinolaryingology, ophthalmology and radiology. According to KATH 2010 report, as of August 2010 the human resource capacity of KATH was at 2331. Table 2 displays the various categories of the human resource strength. From Table 2 it can be deduced that KATH is a very big hospital to have such a number of workers. It fairly justifies its position as the second largest hospital in Ghana.

**Table 1.0: The Human Resource capacity of KATH**

| **Staff category** | **Number of category** | **Staff category** | **Number of category** |
|---|---|---|---|
| Anaesthetists | 29 | Pharmacy staff | 107 |
| Community health and enrolled nurses | 114 | Physiotherapists | 15 |
| Doctors | 418 | Radiographers | 11 |
| General nurses | 476 | Accounts staff | 77 |
| Health aids | 329 | Administration | 58 |
| Laboratory technicians | 50 | Records staff | 19 |
| Midwives | 162 | Kitchen staff | 34 |
| Optometrists | 3 | Engineering staff | 47 |
| Orderly | 189 | | |
| Subtotal | **1770** | **Subtotal** | **561** |
| **Total = 2331** | | | |

**Source:** KATH report, 2010

**1.3 Definition and Dimension of Stress**

There are many definitions of stress., For example Job stress was defined as the harmful physical and emotional responses which occurred when the requirements of the job do not match the capabilities, resources, or needs of the worker. Additionally, it has also been referred to as the non-specific negative response of the body to demand in the work place. Stress can be generally defined as undue, inappropriate or exaggerated response to a situation (Spence, Barnett, Linden, Ramsden, & Taenzer, 1999) (Roohafza, et al., 2012). Whereas anxiety about a situation could be positive, stress is always negative with attending adverse psychological and physiological changes leading to decreased productivity, disease and sometimes death.

The definition of the UK Health and Safety Executive's (HSE) Management Standards (MS) (HSK) that relates to employee stress is used in this research. According to the Management Standards (2010) employee stress is an external organisation factor or stimulus that causes physical and or emotional or even mental discomfort for an employee in an organisation (Management Standards, 2010). It is not only employees that feel stressed in an organisation but even employers or manager as individual also go through stress. Stress also may harm professional effectiveness: It decreases attention (Emmett, 2013) (Robertson, 2012), reduces concentration (Bower & Suzanne, 2004) impinges on decision-making skills (Linden & Lenz, 2001), and reduces providers' abilities to establish strong relationships with patients (McGonagle & Kessler, 1990). Stress also may lead to increased *burnout*, and is defined as a syndrome of depersonalization, emotional exhaustion, and a sense of low personal accomplishment (Bowman, Beck, & Luine, 2003) (Tarnini & Kord, 2011). A recent study found that burnout was significantly associated with suboptimal self-reported patient care (Caplan, 1994) (Van der Bijl & Oosthuizen, 2007) (Strümpfer, 2003). Over a decade ago, the field identified these problems and called for change, advocating better care for health professionals (Schultz & Schultz, 2011).

The Management Standards (2010) has developed a model that explains the main drivers or causes of stress in an organisation which must be managed. These are six are categorised demand, control, support, relationships, change, and role conditions in the organisations. Each of the areas mentioned above have significant impact on the extent to which an organisation will be successful in its endeavour (Management Standards, 2010)

The Management Standards (2010) defines work demand as all factors relating to the employees' workload, work design patterns and the environment where they are working since these can have significant effect on their mental and physical wellbeing. The control environment includes the extent to which employee have some say or are recognised in the organisation also affects the way they do their work. According to the Management Standards (2010), the meaning of support as a factor in decision making is the extent to which there is constant encouragement from both management and staff as opposed to rancour, animosity, sponsorship to develop themselves within and outside the organisation (Tracy, 2000) (Zhang & Zhu, 2008)It also deals with the availability of resources including wages and salaries that are equitable and commensurate with employee's effort. Further (Sanders, 2013) also explains support to mean gaining all the assistive devices needed and the legitimate guidance from their immediate superiors.

When it comes to the issue of relationship the Management Standards (2010) explain this as the existence or otherwise of a positive work environment. Where there is no positive work environment, the end product is conflict and encourage unacceptable behaviour which history organisation harmony. In terms of role, this is explained in the Management Standards (2010) as the extent to which employee have an understanding of the role in the organisation and how the organisation make sure they do not have conflicting roles. Finally there is the issue about change management and in this case employee can be stress by the pace of change of the way change management so communicated and implemented (Newton & Handy, 1995). Management Standards cover six key areas of work design that, if not properly managed, are associated with poor health and well-being, lower productivity and increased sickness absence. In other words, the six Management Standards cover the primary sources of stress at work. Aspects of these areas are examined more closely.

**Stress in the Health Care Professions**

There is considerable evidence that the stress inherent in health care professionals negatively impacts health care professionals. Stress can lead to increased depression (Herbert, 1980), decreased job satisfaction (Sanders, 2013) disrupted personal relationships (Kristensen, Borritz, Villadsen, & Christensen, 2005), psychological distress (Shirom & Melamed, 2005) and even suicide (Maslach & Leiter, 1997) (Maslach, Schaufeli, & Leiter, 2001). Stress in medical practice has always been a topical issue.

This is partly because medical service involves taking care of other peoples' lives and mistakes or errors could be costly and sometimes irreversible. It is thus expected that the medical doctor himself must be in a perfect state of mind devoid of morbid worries and anxieties. This is however not usually the case, because the doctor apart from being affected by the same variables that impose stress on the general population, is also prone to stress because of the peculiarities of his work situation and the expectation of the society at large. The British Medical Association (BMA) published a treatise on stress in junior doctors (Shaufeli & Maslach, 2009) and later in senior doctors. The conclusions were similar, to the effect that stress existed to a significant proportion in both groups and that it is inimical to the doctors' health and service delivery to patients. The magnitude of the problem was further emphasized in the report of the American Foundation for Suicide Prevention[7] which claimed that on the average, death by suicide is about 70% more likely among male physicians than among other professionals and 250–400% higher among female doctors (Sauter, 1995)

Numerous other recent studies have explored work stress among health care personnel in many countries. Investigators have assessed work stress among medical technicians, radiation therapists, social workers, occupational therapists, physicians, and collections of health care staff across disciplines. Most of the studies focused on nurses, but the studies were not always clear regarding which types of nursing personnel participated. Registered nurses (RNs) were the dominant focus. Other investigations considered licensed practical nurses (LPNs) and nursing aides; licensed nurses (e.g., RNs and LPNs); RNs, aides, and clerical staff and generic assessments of nursing staff. Only four of these investigations considered the effect of stress and burnout among nurses on patient outcomes. These studies, similarly, in an investigation of the relationship between personal stress and clinical care, physicians reported incidents in which they believed patient care was adversely affected by their stress (Robert, 2012). Most of the investigations explored the effects of work stress and burnout on health care personnel in acute care settings. Staff working in long-term care (LTC) and nursing homes was the focus of four studies, however. Interestingly, two reports from nursing homes found that staff experienced more stress when caring for patients with dementia (Quick & Tetrick, 2010). In addition, possible differences among types of nursing personnel were illustrated in a study of rural nursing homes where aides reported more job strain than RNs. Findings are also emerging about differences in work stress based on shift length and generational cohort. Generational differences were explored in a single-site report of RNs, in which baby boomers (43 percent) and Generation Xers (41 percent) had different perceptions of work stress (Quick, Murphy, Hurrell, & (Eds.), 1992). The investigators expanded their work to four hospitals in the Midwest (N = 694 RNs). Baby boomers comprised 53 percent of the sample; their scores for stress and strain variables were significantly worse than nurses in the older and younger cohorts. The baby boomers also had significantly less social support.

**Stress & Burnout for Nurses**

Shift length, 8-hour versus 12-hour, was explored in relation to both burnout 95 and role stress. 60 in a random sample of Michigan nurses, RNs working 12-hour shifts (n = 105) reported significantly higher levels of stress than RNs working 8-hour shifts (n = 99).

However, when differences in experience were controlled, stress was similar in both groups (Parkes, 1982). Conversely, a study from Poland illustrated that nurses working 12-hour shifts (n = 96) compared unfavourably in several aspects to nurses working 8-hour shifts (n = 30). Although the type of nursing personnel involved was unclear, the nurses on 12-hour shifts experienced significantly more chronic fatigue, cognitive anxiety, and emotional exhaustion.

**1.4 Gender and Family Obligations**

The complexity of work stress is further illustrated in two studies that considered gender effects. The prevalence of burnout was studied in a convenience sample of hospital-based neonatologists (n = 86) and office-based paediatricians (n = 97). Although the prevalence of burnout was comparable between the specialty groups, burnout was found more frequently in female physicians (79 percent) than male physicians (62 percent). In a study of female physicians, working full-time and 47 working reduced hours, burnout was not related to number of hours worked per se. Rather, burnout was lower if female physicians worked the number of hours they preferred ($r = -0.22$, $P = 0.03$) (Leka, Aditya, Zwetsloot, & COX, 2010) (Houdmont & Leka, 2010). These studies may have particular relevance for nursing because the profession is predominately female. Findings from studies that explored family-work conflict in relation to stress, burnout, and well-being indicated the importance of considering both work and family spheres.

An investigation conducted using a diverse sample of 342 nonprofessional employees (17 percent worked in healthcare; 70 percent were women) found family-work conflict was a predictor of well-being (Cox, 2000) (Sinclair, 2009) (Cohen & Margolis, 1973). A study of a diverse group of health care personnel compared 64 cases with 64 controls. Although the subjects in the case group were more likely to experience more objective stressful situations in and out of work, for both the case group and the control group, both work and non-related work stress contributed to anxiety and depressive disorders (De Lange, et al., 2003) (De Lange, et al., 2010).

Work interfering with family had a direct relationship with work exhaustion in a 4-year study of medical technologists, 80 percent of whom were female. Family interfering with work, however, was not studied. A study of 101 female nurses found that work interfered with family more than family interfered with work (Everly, 1986). The investigators noted, however, that most of the nurses, who were in their mid-40s, were between the demands of child care and elder care (Aspinwall & Tedesch, 2010). This finding is consistent with findings from a study of 170 Australian nurses: the principal determinant of stress was workload; nurses were unlikely to bring personal stress to work. Conversely, there was no difference between female physicians working full-time or reduced hours in regard to work interfering with family or family interfering with work. In addition, a study of family-work conflict identified personality as an important factor in whether individuals perceive situations as stressful.

### 1.5 Personal Characteristics and Work Relationships

Personality was explored as an important variable in the burnout/work stress equation in a number of investigations. Together, these studies support findings that perceptions of job stress and burnout are not just a product of work conditions because not all Patient Safety and Quality: An Evidence-Based Handbook for Nurses workers, exposed to the same conditions, develop burnout or perceive stress (Fairbrother & Warn, 2003) (Mikkelsen, Øgaard, & Landsbergis, 2005). However, the specific features of personality that affect the perception of stress or burnout remain unclear. Neuroticism has been associated with exhaustion. External locus of control has demonstrated a positive relationship with burnout and stress. Findings are mixed for hardiness (Pandey, Gaur, & PestonjeeD.M., 2013) (Rizvi, 2013).

Evaluations of anxiety reflect a link with stress and burnout. Anxiety is viewed as having two components-state anxiety, the temporary component which manifests when an individual perceives threatening demands or dangers, and trait anxiety, the more stable component which may be regarded as a personality characteristic (Jandackova, Paulik, & Steptoe, 2012). In a study of intensive care unit nurses, the investigators concluded that individuals high on state-anxiety were not only at risk for burnout, but also for making medical errors. In another study, higher trait-anxiety predicted psychological distress (Calnan & Kelloway, 2012) (Dupré, Barling, & Dawe, 2014). In addition, relationships with other staff co-workers, physicians, head nurses, other departments were also predictors of psychological distress. Investigators have also examined the association between interpersonal relationships and burnout and stress. The exact linkages are not yet understood. Problematic relationships among team members were shown to increase burnout.

Verbal abuse from physicians was noted to be stressful for staff nurses (Karl & Fischer, 2013) (Farber, 2014). In a study of 260 RNs, conflict with physicians was found to be more psychologically damaging than conflict within the nursing profession. However, a study exploring verbal abuse among 213 nursing personnel (95 percent RNs) found the most frequent source of abuse was other nurses (27 percent). Families were the second most frequent source of abuse (25 percent), while physicians ranked third (22 percent).

### 1.6 Management Styles

Relationships between staff nurses and nurse managers are particularly important when examining stress and burnout. Numeric ratings from a survey of 1,780 RNs indicated that supervisor support and quality of supervision were lowest for nurse managers (Cordes & Dougherty, 1993) (Cahoon, 2003). Handwritten comments from 509 (28.6 percent) of the RNs clarified these ratings by noting the following problems: (a) inadequate unit leadership and the frequent turnover of nurse mangers, (b) insufficient physical presence of the supervisor on the unit, (c) failure to address problems—too much sweeping them aside or not even being aware they exist, and (d) modest awareness of numerous staffing issues (Herbert, 1980). These ideas were corroborated in a study of 537 RNs from Canada. Using structural equation modeling, the investigators substantiated the importance of manager behavior on employee experiences. Similarly, in a qualitative study of 50 nurses conducted in England, managers were identified as a direct cause of stress.

Finally, responses from 611 RNs on 50 inpatient nursing units in four south eastern U.S. hospitals showed that group cohesion was higher and job stress lower when nurse managers used a more participative management style (Newton & Handy, 1995). In addition to illustrating a likely connection between nurse managers and staff nurse stressors, these studies also reflected the demanding role of today's nurse managers who are often responsible for multiple patient care areas. However, only two studies were identified between 1995 and 2005 in which burnout was assessed in nurse managers and nurse administrators. One study was conducted in the United States and the other study in Canada. Investigators for the Canadian study examined burnout in a random sample of nurses in first-line (n = 202) and middle-management (n = 84) positions. Nurses in both groups reported high levels of emotional exhaustion and average job satisfaction (Maslach & Leiter, 1997) (Maslach, Schaufeli, & Leiter, 2001). In the U.S. study, the investigators explored burnout among nurses (N = 78) from rural and urban hospitals in a southeastern State Stress & Burnout for Nurses who held positions in middle-management and higher. Almost half the respondents (49%) reported high levels of emotional exhaustion.

## *2 Materials and Methods*

We adapted but modified items or causes of stress in the new UK Health and Safety Executive's (HSE) Management Standards (MS) model of stress model as our key measurement in our questionnaire. This was in response to growing concern in the extant literature that the General Health Questionnaire which has been the major device for evaluating the causes of stress in an organisation is becoming outmoded. This notwithstanding the HSE model was adopted on its own merit because it embraces all the essential variables which existing models have determined as potential causes of stress among employees. The Management Standards cover six key areas of work design that, if not properly managed, are associated with poor health and well-being, lower productivity and increased sickness absence. In other words, the six Management Standards cover the primary sources of stress at work. These are:

- Demands factors – this includes issues such as workload, work patterns and the work environment.
- Control factors – how much say the person has in the way they do their work.
- Support factors – this includes the encouragement, sponsorship and resources provided by the organisation, line management and colleagues.
- Relationships factors – this includes promoting positive working to avoid conflict and dealing with unacceptable behaviour.
- Role factors – whether people understand their role within the organisation and whether the organisation ensures that they do not have conflicting roles.
- Change factors – how organisational change (large or small) is managed and communicated in the organisation.

In all the HSE model has a total of 23 categorized into six parts namely demand factors, control factors, support factors, relationships factors, change factors and role factors).

We tested for validity of content of the questionnaires by rigorously pre-testing on appropriate sample (within the population but outside the final sample) to refine the wordings. We measured all construct items on a five-point Likert-type scale (1-disagree strongly, 5-agree strongly).

The questionnaire collected data about the background, and other demographic information about the respondents as well as their views concerning the causes of stress under the six categories. We shortlisted and distributed the questionnaires to key informants in the survey based on their role in the hospital. We distributed the final questionnaires to health professional at the Komfo Anokye Teaching Hospital as follows:

- 10 Anaesthetists
- 20 Community health and enrolled nurses
- 120 Doctors
- 200 General nurses
- 50 Health aids
- 10 Pharmacy staff
- 10 Physiotherapists
- 10 Radiographers
- 10 Laboratory technicians
- 10 Midwives
- 3 Optometrists

In all 453 healthcare professionals were reached out of the population of 2331 personnel employed by the Komfo Anokye Teaching Hospital.

## *3 Analysis of Data*

We performed a two staged statistical analysis to obtain the results. Firstly, we performed factor analysis to investigate the causes of stress based on the Health and Safety Executive's (HSE) Management Standards (MS) model after which we imposed a linear regression model to examine the effect of these factors on the hospital staff. We thoroughly verified the basic assumptions i.e. the constant variance and normality and these did not affect the results.

We determined the appropriateness of the data for factor analysis by employing Kaiser–Meyer-Olkin measure of sampling adequacy (KMO-MSA) and Bartlett's Test of Sphericity. We recorded a KMO value of more than 0.60 and a significant value for the Bartlett's Test of Sphericity. We performed Varimax rotation and principle components analysis for factor analysis. We eliminated all the factors that had factor loadings lower than 0.50 after which we conducted the Cronbach's alpha reliability analysis. We ensured that all measure of sampling adequacy exceeded the Cronbach's alpha reliability value threshold level of 0.60 and large and significant Bartlett's Test of Sphericity. Finally we eliminated 5 items of the initial 23 on the six causes of stress as indicated by the Health and Safety Executive's (HSE) Management Standards (MS) model (demand, control, support, relationships, change and role) since they had a factor loading lower than 0.50. The exploratory factor analysis and reliability statistics measures of the accepted 18 variables are shown in table 1.1.

**Table 2.1 Exploratory Factor Analysis and Reliability Statistics Measures of the Accepted 18 Variables**

| Stress Causes Dimension | Item | Factor | Cronbach α | KMO-MSA |
|---|---|---|---|---|
| **Demand Factors** | Workload | .608 | .832 | KMO .813 |
| | Work patterns/design | .603 | | Bartlett |
| | Work environment | .810 | | 1239.822 |
| | Work content | .650 | | Significance .000 |
| **Relationship Factors** | Relationship with colleagues | .821 | .772 | |
| | Relationship with managers | .681 | | |
| | Work Ethics | .722 | | |
| **Control Factors** | Recognition by Managers | .672 | .747 | |
| | Respect by Managers | .821 | | |
| | Involvement in decision making | .721 | | |
| **Support Factors** | Encouragement | .629 | .647 | |
| | Sponsorship | .921 | | |
| | Financial Incentives | .655 | | |
| **Role Factors** | Understanding roles | .742 | .721 | |
| | Conflicting roles | .612 | | |
| **Change Factors** | Speed of Change | .691 | .821 | |
| | Communication of Change | .782 | | |
| | Change leadership | .837 | | |

### 4.1Regression Analysis

Before the linear regression was performed, we did a product moment correlational analysis of the variables and noted the non-existence of multicollinearity between the variables. Descriptive statistics were used to draw up a respondent profile, by comparing mean scores, analysing mean differences and defining the extent to which mean scores either fall below or exceed the Likert scale's midpoint, one-sample t-tests are conducted. To test the effect of the six factors on stress, a bivariate linear regression analyses was carried out using the following model.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e$$

- $\alpha$ = origin of regression line or the intercept
- $B$ = the coefficient of regression
- $Y$ =Stress
- $X_{1...}$ Predictor Variables

The dependence test (Y) measures the relationship between a predictor and a criterion variable and indicates the extent to which the prior variable influences the latter.

ANOVA tests are executed to test whether significant differences between groups, such as anaesthetists, community health and enrolled nurses, doctors, general nurses, health aids, pharmacy staff, physiotherapists, radiographers, laboratory technicians, midwives and optometrists. Post Hoc tests, based on the Scheffe procedure, are conducted to see where the significance lies. For each specific cause of stress, we created a composited score by summing up all the scores for the set of questions under the dimension for each respondent. The composite scores were then used as dependent variables in the linear regression models. In separate multivariate regression models, we treated each dimension as the outcomes of interest, and the three other dimensions as covariates. All analyses were carried out in STATA version 11.

**Table 3.2 Regression Models Showing the Association between Each of the Six Dimensions of Stress Causes**

| Predictor Variable | $R^2$ | Beta | P | Significance Level |
|---|---|---|---|---|
| **Demand Factors** | 0.326 | 0.871 | 0 | P<0.001 |
| **Control Factors** | 0.448 | 0.669 | 0 | P<0.001 |
| **Support Factors** | 0.348 | 0.59 | 0 | P<0.001 |
| **Relationship Factors** | 0.424 | 0.651 | 0 | P<0.001 |
| **Role Factors** | 0.539 | 0.734 | 0 | P<0.001 |
| **Change Factors** | 0.567 | 0.643 | 0 | P<0.001 |

Table 1.2 shows the bivariate regression analysis results for dimensions of demand, control, support, relationships, change and role and their effect on stress among health professionals in the hospitals. Further the fifth hypothesis further shows the extent to which these factors impact on stress among the workers. All the analysed results as shown in table 1.1 indicate a strong, positive correlation between the predictor variables "demand, control, support, relationships, change and role" and the criterion variable "stress". In all instance the "P" value is 0 suggesting high significance. The $R^2$ values in each case reveals that more than 30% of the deviation from the criterion variable's mean can be explained by the predictor variables. Following the claims of (Pallant, 2011), it is observed that the Beta values are more than 0.5 in each case and that supports a positive correlation, predicting that the higher the predictor values, the more the stress of the hospital personnel. In summary the data show that all the six elements (demand, control, support, relationships, change and role) that have been analysed have significant impact on employee. However, they do not impact on employees in the same measure based on their composited value as show in the table 1.3

**Table 4.3 Composite Impact of Predictor Factors for Frontline Medical Practitioners (Nurses and Doctors) and Other Workers**

| Moderator Variable | Group | $R^2$ | Beta | P | Significance Level |
|---|---|---|---|---|---|
| Nurses and Doctors | High group | .694 | .803 | 0.000 | P<0.001 |
| Other workers | Low group | .468 | .717 | 0.000 | P<0.001 |

Table1.3 shows that specialist physicians, general practitioners/family physicians, and registered nurses (excluding supervisors and head nurses) had a statistically elevated likelihood of work stress relative to other health care providers. Consistent with the bivariate results, the odds ratio for nurses supervisors and head nurses also appeared to be elevated. This analysis indicates that frontline health care providers such as doctors and nurses are far more likely than other employed people in the hospital to feel that their jobs are highly stressful. Physicians and nurses reported the most stress, even when influences outside the job are taken into account. Because doctors and nurses bear a major responsibility for delivering health care, these findings should concern all Ghanaians

## *5. Conclusions and Policy Proposal*

A key source of competitive advantage of an organisation is the quality and strength of its human resources. Stress and burnout are concepts that have sustained the interest of nurses and researchers for several decades. These concepts are highly relevant to the workforce in general and nursing in particular. Healthcare employees provide the mental and physical human effort that supports their organisations to provide services. Hospitals as modern organisations must do everything possible to ensure that employees related stress that has impact on employee's productivity and others are completely eliminated. The study is consistent with existing studies that employee stress is caused by issues relating to demand, control, support, relationship, role and change.

Most of the employees believed that stress is caused by the load of work they handle each day, the pattern of work and its design, as well as the work environment. The control environment has contributes to stress among hospital staff.

The reduction and elimination of stress involves a partnership between the hospital's managers, individual members of staff, the specialist support services and the recognized trade unions. The following paragraphs summarize the main responsibilities for the health and safety and welfare of staff, and apply equally to the management of stress at work. The Ministry of Health in Ghana and the Teaching Hospitals Council must begin to develop interest in supporting individual hospitals initiatives to control stress. Specifically managers at the Health Ministry and Human resource departments in teaching hospitals have a responsibility to undertake and implement recommendations of risks assessments within their own areas, ensure good communication between management and staff, particularly where there are organisational and procedural changes and ensure staff are fully trained to discharge their duties. They have the responsibility to ensure that all their staff are provided with appropriate developmental opportunities, monitor workloads to ensure that individual staff are not overloaded or under loaded and monitor working hours and overtime to ensure that individual staff are not overworking. There is urgent need for coordinated efforts at ensuring that staff are taking their full holiday entitlement, attending training in good management practice/techniques and the recognition of stress and ensure that staff are informed of appropriate services, policies and facilities.

Where appropriate, unit heads must refer to Human Resources any staff who may present with a stress related illness and offer appropriate additional support to a member of staff who is experiencing stress outside work e.g. bereavement or separation. There is the need to do further research to improve on the findings of the research. Using the HSK approach to determine employee related source is a very important source but it does not cover all the things which are needed. It is possible for further research to also use other models or a combined model to come help determine other major causes of employee related stress. The study is limited by the fact that it sampled the view of only 1/5th of the employees in the whole hospital and that is limits generalisations. Further it is possible the respondents were not truthful in their responses.

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