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Effects of Gender, Occupational Level and Industry Type on the Health Status of Some Nigerian Manufacturing Employees

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Abstract

This study examined the effects of gender, occupational level and industry type on the health status of employees in some Nigerian manufacturing industries. Data were collected from 600 employees sampled from shoe, textile and food industries. The sample included 150 junior workers (120 males and 30 females), 30 supervisors (27 males and 3 females) and 20 managers (18 males and 2 females) totaling 200 employees from each industry. The result of the t-statistics shows no significant gender difference in their health status. The result of the One-way ANOVA shows a significant difference due to occupational level. Moreover, the results of the Two-way (3 X 3) ANOVA show the significantly separate and interaction effects of occupational level and industry type on their health status. The results have implications for developing good health promotion programmes based on the needs of employees accordingly. The paper concludes by suggesting that work should be designed and organized to enhance the psychological well-being and health of workers in the future.
Keywords: gender, health, occupational hazards, psychological wellbeing, industry

Introduction

Health they say is wealth. This means that healthy living is fundamental to satisfaction with work and life. Health leads to success at work. The health status of workers is an important indicator of the economic and social development of a country. Workers' health affects their productivity, income, and well-being, as well as the overall health system and public health outcomes. However, workers' health may vary depending on their demographic characteristics, such as age, gender, education, income, occupational level and industry type. In Nigeria, a large and diverse country with significant health challenges and inequalities, understanding the demographic factors in the health status of workers is essential for designing and implementing effective policies and interventions. This study aims to examine the effects of gender, occupational level and industry type on the health status of some Nigerian manufacturing employees, and to explore the possible factors and mechanisms that will explain possible differences. The main research question is: Will differences exist in the health status of the employees due to gender, occupational level and industry type.

A number of risks to personal health have been identified by Margolis, Markham & Markham (1974) and stress has been found to be taking a devastatingly high toll on our combined productivity and health (Watts & Cooper, 1992). Other risks to good healthy living are poor overall physical health, escapist drinking, depressed mood, low self-esteem, low job satisfaction and satisfaction with life, low levels of motivation to work, an intention to quit and high rate of absenteeism. It is assumed that if these situations and circumstances are ameliorated or made positive, the health condition of the individual will be improved.

Blanc, Jonge & Schaufeli (2000) pointed out that job stress is a major concern, not only for the employees involved, but also for organizations. A survey among nearly 16,000 European workers revealed that 29% considered that their work activity affected their health (Paoli, 1997). The work-related health problems mentioned most frequently were back pain (30%), stress (28%) and overall fatigue (20%). In Britain, a National Survey of Health and Development of almost 1,500 young men showed that 38% of the sample were under some or severe 'nervous strain' at work, whereas only 8% were under similar strain at home or in their personal lives (Cherry, 1987). This shows that work-related factors seem to have a greater impact upon the health status of people.

Theoretical Framework

The Vitamin Model (VM), a framework of mental health developed by Warr (1987), was used in this study. The central idea underlying the VM is that mental health is affected by environmental psychological features, such as job characteristics, in a way that is analogous to the effects that Vitamins are supposed to have on our physical health. Warr's framework suggests that job characteristics are grouped into nine categories that relate differently to mental health outcomes according to the type of 'Vitamin' they represent. It is assumed that persons and situations interact in the prediction of mental health.

Warr (1987) draws an analogy between the way in which Vitamins act on the human body and the effects of job characteristics on mental health. Following this line of reasoning, de Jonge & Schaufeli (1998) refer to Warr's Vitamins as 'psychological work vitamins'. The absence of certain job characteristics impairs mental health, whereas the presence of others is likely to have a beneficial effect on employees' mental health.

Warr (1987, 1994c) identified nine job features that may act as determinants of job-related mental health as: availability of money, physical security, valued social position, opportunity for control, opportunity for skill use, externally generated goals, variety, environmental clarity, and opportunity for interpersonal contact. Warr assumes that the last six job characteristics (e.g. opportunity for control and variety) have curvilinear effects. A lack of such features or an excess of such features will affect mental health negatively. For example, the negative impact of excessively high levels of job control has been identified in laboratory as well as occupational studies (e.g. Burger, 1989; de Jonge, Schaufeli & Furda, 1995). The remaining three job characteristics (physical security, availability of money and valued social position) are supposed to follow a linear pattern. The higher such a job characteristic, the higher the level of mental health will be. Warr (1998) noted, however, that it is improbable that the latter associations are purely linear.

A few cross-sectional studies have investigated the patterns proposed by the Vitamin Model (VM) (e.g. Warr, 1990b., Xie & Johns, 1995., de Jonge & Schaufeli, 1998). Most notably, a study by de Jonge & Schaufeli (1998) among 1437 Dutch healthcare workers confirmed that job demands and job control, seem to be curvilinearly related to some aspects of employee mental health. However, all these studies have failed to take account of the possibly multifaceted ways in which the job characteristics may affect job-related well-being. Moreover, there has been no empirical evidence for the interactions between individual and job characteristics as related to employee health within the VM. The present study hopes to fill this gap by determining the separate and interactive effects of demographic factors like gender, occupational level and industry type that tend to influence the health of workers.

Review of Literature

Researchers have identified five chief categories of issues that are common to all jobs as: factors intrinsic to a job, role in the organization, relationships at work, career development, and organizational climate and structure (Cooper, Cooper & Eaker, 1988). They listed so many physical and behavioral symptoms of stress that are associated with these issues (p. 360). These symptoms are similar to the symptoms that make up the Psychophysiological Symptoms Checklist (PSC) (Omoluabi, 1987/1988) that was used to collect data for this study. Factors which may be intrinsic to the job include: poor working conditions, shift work, long hours, risk and danger, new technology, work overload and work underload (Arnold, Cooper & Robertson, 1995).

Considerable research has linked working conditions to mental health. Kornhauser (1965) suggested that poor mental health was directly related to unpleasant working conditions. Others have found that health is also adversely affected by repetitive and dehumanizing work settings such as fast paced assembly lines (Cooper & Smith, 1985). Studies have found that shift work affects blood temperature, metabolic rate, blood sugar level, mental efficiency and work motivation not to mention sleep patterns and family and social life. The shift work patterns were found to be a predictor of mental and physical ill health (Arnold, Cooper & Robertson, 1995, p. 367). The long working hours required by many jobs appear to take a toll on employees' health. A research study has made a link between long working hours and deaths due to coronary heart disease (Breslow & Buell, 1960). The resulting adrenalin rush, respiration changes and muscle tension associated with a job which involves risk or danger, were all to be potentially threatening to long-term health.

Researchers have equally identified three critical factors that are associated with a person's role in an organization as role ambiguity, role conflict and the degree of responsibility for others as significant sources of stress (Arnold, Cooper & Robertson, 1995). Responsibility has been found to be another organizational role stress agent. In an organization, there are basically two types of responsibility: responsibility for people, and responsibility for things, such as budgets, equipment and buildings. Responsibility for people has been found to be particularly stressful depending on the specific nature of the responsibility, particularly as it relates to the need to make unpleasant interpersonal decisions (Ivancevich & Matteson, 1980). Another reason is that people in positions of responsibility lend themselves to overload, and perhaps role conflict and ambiguity as well. An investigation in the United Kingdom of 1,200 managers sent by their companies for annual medical examinations linked physical stress to age and level of responsibility in the organization (Pincherle, 1972).

Lazarus (1966) suggested that supportive social relationships with peers, supervisors, and subordinates at work are less likely to create interpersonal pressures, and will directly reduce levels of perceived job stress. Most studies have concluded that mistrust of fellow workers is connected with high role ambiguity, poor communication, low job satisfaction, and feelings of job-related threat to one's well-being.

Adequate social support can therefore, be critical to the health and well-being of an individual and to the atmosphere and success of an organization. French & Caplan (1972) found that strong social support from co-workers eased job strain. Coch & French (1984) found that non-participation at work was a significant predictor of strain and job-related stress, relating to general poor health, escapist drinking, depression, low self-esteem, high rate of absenteeism

and plans to leave the organization. Much of the stress at work is caused not only by work overload and time pressures, but also by a lack of rewards and praise, and more importantly, by not providing individuals with the autonomy to do their jobs as they would like.

The incidence of stress can vary depending upon the organizational level at which the manager operates with junior staff experiencing most stress (Gaertner & Ruther, 1981). The junior executive probably striving for the top, or the white-collar worker surrounded by frustration is the most likely candidate for a heart attack (Packard, 1962). Life at different levels of the organization is viewed as both a source of satisfaction and stress (Cooper, 1979). Differences between the sexes in sources and levels of occupational stress is poorly supported by the evidence in the literature (e.g. McKenna & Ellis, 1981., Reynolds, 1981). This means that more research is needed to ascertain these differences.

Hypothesis
This study hopes to examine the likely differences that exist in the health status of the subjects due to gender, occupational level and type of industry.

Methods
Participants
600 subjects comprising employees from shoe, textile and food industries were used for the study. The sample included 150 junior workers (120 males and 30 females), 30 supervisors (27 males and 3 females) and 20 managers (18 males and 2 females) totaling 200 employees from each industry.

Research Instrument
The Psychophysiological Symptoms Checklist (PSC) developed by Omoluabi (1987/1988) was administered to collect data from the subjects. The PSC has 50 items to which subjects were asked to respond on a scale of 0= No Complaint to 5= Very Severe Complaint. The items are used to assess the degree of subjects' emotionally and psychologically induced physical health complaints. The instrument was standardized by the author and it has been validated and proved to be a reliable and valid measure of emotional health and well-being of people.

It has the following reliability coefficients: Cronbach's Alpha**:** 0.86, Split-half**:** 0.57, Odd-Even**:** 0.92. These coefficients indicate that the PSC items are internally consistent and yield similar results across different administrations.

Its validity was evaluated by correlating it with the Maslach Burnout Inventory (MBI)**.** The concurrent validity coefficients between the PSC and MBI ranged from 0.01 to 0.36**.** This suggests that the PSC is related to burnout symptoms, supporting its validity.

Procedure
The instrument was administered to the subjects either individually or in groups by the research assistants. In most cases, the test was administered when the subjects were on break and were therefore relaxed. It took between 5-10 minutes to complete filling the test form.

Scoring and Data Collation
The test form was scored according to the provision in the manual for the PSC. The scores were added and lower scores indicated better health condition.

Experimental Design
The Factorial Design was used in this study. This was further broken down and simplified by using the two-group design, the randomized three group design and the two factorial design.

Data Analysis
The scores obtained were subjected to analysis with the use of t-statistics (to find gender differences), One-way ANOVA (to find differences due to occupational level) and the Two-way (3 x 3) ANOVA (to find differences due to the separate and interaction effects of occupational level and industry type).

Results

The results of this study are presented in tables as follows:

Table 1
Mean Scores and Standard Deviations of Health Status according to Gender

	Mean	SD	T
Female	21.00	33.80	.2
Male	21.58	42.25	

Note: Not Significant
df = 598, t(.05) = 1.65
The results above show that male subjects had a higher mean score. However, there was no statistical significance between the two genders. This further confirms the positions of McKenna & Ellis (1981) and Reynolds (1981) in the literature.

Table 2
Mean Scores and Standard Deviations of Health Status according to Occupational Level

	Mean	SD
Junior Workers	27.10	44.91
Supervisors	5.30	18.57
Managers	3.58	11.16

The results above show that mean scores increase from managers through supervisors to the junior workers. This means that junior workers had the highest incidence of symptoms of stress that is suggestive of poor health.

Table 3
One-way ANOVA Summary Table according to Occupational Level

Source of Variation	SSQ	Df	MSQ	F
Between Groups	56969.25	2	28484.63	18.02*
Within Groups	943588.37	597	1580.55	

Note: * = p < .01, Table F = 4.62

The results above show a significant difference among the three categories of workers. The results provide support to the initial findings of Pincherle (1972) and Gaertner & Ruther (1981).

Table 4
Mean Scores and Standard Deviations of Health Status according to Occupational Level and Type of Industry

		Mean Score	SD
Level	Junior workers	27.10	44.91
Type of Organization	1	20.39	42.89
	2	20.75	40.91
	3	40.15	48.03
Level	Supervisors	5.30	18.57
Type of Organization	1	5.27	16.76
	2	10.47	26.87
	3	.17	.91
Level	Managers	3.58	11.16
Type of Organization	1	2.15	7.05
	2	8.60	17.17
	3	.00	.00

Table 5
3 x 3 ANOVA Summary Table according to Occupational Level and Type of Industry

Source of Variation	SSQ	Df	MSQ	F
Type	22787.68	2	11393.84	7.46**
Level	56969.25	2	28484.63	18.65**
Interaction	17939.62	4	4484.91	2.94*
Residual	902861.07	591	1527.68	
Total	1000557.63	599	1670.38	

Note: * = .05 ** = .01

Table F(.05) = 2.38, Table F(.01) = 4.62

The results above show that type of industry and occupational level have separate and significant effects on the health status of the subjects at $p < .01$ respectively. Moreover, they both have interactive effect on the employees' health at $p < .05$.

Summary of Findings
The results in Table 1 show no significant gender difference. The results in Tables 2 and 3 show a significant difference due to the level of occupation. The results in Tables 4 and 5 show separate and significant effects due to the level of occupation and the type of industry. The results also show a significant interaction between the two of them in order to promote good health in the workplace.

The results have implications for developing good health promotion programmes based on gender-specific needs. Another implication is that it can address occupational stressors at different job levels. Moreover, industry-specific health initiatives can target relevant health risks. To enhance the health of Nigerian manufacturing employees, policy-makers, employers and relevant stakeholders must collaborate to implement gender-sensitive policies; provide

comprehensive occupational health services; and tailor interventions based on industry-specific needs.

Conclusion

Work should be designed and organized in such a way as to facilitate stable interaction between employees in the performance of various tasks, as well as maintaining social ties. Here, the importance of social interaction is emphasized as a means to reduce stress in the work environment as previously emphasized by Alealay & Pasick (1983). Steady and stable job relationship is also advocated since people who had a constant set of co-workers (colleagues) had lower cholesterol levels than those whose co-workers changed frequently (Cassel, 1963).

Participative management schemes, are suggested as they have potential not only to improve the quantity and quality of production, but also to increase social support, reduce stress, and, as a consequence, enhance health and well-being as previously emphasized by Cobb (1976) and Elkin & Roseh (1990).

Psychotherapy, regular physical exercise and vacations are recommended for workers to keep fit and to reduce stress at work. This is corroborated by the finding of Mogaji (2014) that the physical exercises that are characteristic of the military life, promoted psychological health and made the discharged and serving military personnel to have lower scores in PSC when compared with their civilian counterparts.

Lastly, we need stress counselors to enter the arena of work. Organizations must begin to manage people at work differently, treating them with respect and valuing their contributions if we are to enhance the psychological well-being and health of workers in the future (Cartwright & Cooper, 1994).

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