

## A Study on Impact of Work Stress among Mat Factory Workers in Kano – Nigeria in 2015

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### ABSTRACT

The focus of this study is to find out the level of work stress and the major causes of work stress among mat factory workers in Kano - Nigeria. 140 sets of questionnaire were distributed to the mat workers and 121 questionnaires come back to the researchers (response rate: 86.43%). 106 workers were male representing 87.60%. Their average age was 32.52 ±4.50 and average working experience was 10.4±6.4. The data collected were analyzed using Henry Garrett ranking method the results of the study identifies management attitude towards worker (difficult relationships with administrators and/ or coworkers, managerial bullying, harassment, etc.) as one of the major cause of stress among mat factory workers. Others include and not limited to toxic work environment, negative workload, types of hours worked, role conflict, lack of autonomy, career development barriers, and organizational climate. Some of the symptoms of stress shows that feeling tired, depressed and anxious rank first (65.04), experiencing headache and blood pressure rank second (55.70), unable to relax, concentrate and sleep third (54.62), others are distressed and irritable 951.64), low back pain, Joint & neck pain 951.45), increased absenteeism (42.80), increase alcohol and smoking (42.09), decrease commitment to work (41.12), lastly was the moodiness and feeling lonely 940.36). From the results it shows that mat factory workers in Kano – Nigeria are working under heavy stress.

**Key words:** Stress, Stressors, Occupational Health, Impact and Consequences

### INTRODUCTION

Stress is often described as a feeling of being overloaded, wound- up tight, tense and worried. We all experience stress at times. Stress can also be harmful if we become over-stressed and it interferes with our ability to get on with our normal life for too long [1]. Chang's Dictionary of Psychology Terms, defined stress as "a state of physical or mental tension that causes emotional distress or even feeling of pains to an individual [2]. Selye [3] defined stress as the condition that can give rise to psychologically felt stress or discomfort and psychological state itself. He goes further to say that stress is the sum of all non- specific effects of factors that can act upon the body. Stress at work is seen as one of the major psychosocial risks of work. Work-related stress is one of the problems confronting employees. European commission [4] defines stress as the emotional, cognitive, behavioral and psychological reaction to aversive and anxious aspects of work, work environments and work organizations. Stress is a physical and emotional reaction to change. Stress is associated with demand and constraints. The former refers to the loss of something desired. The latter

prevents an individual from doing what he or she desires. Both can lead to potential stress. Stress is highly peculiar in nature. Some people have high forbearance for stress and thrive well in the face of several stressors in the environment. On the other hand, some have very low level of forbearance for stress and they become paralyzed when exposed to stressors. Stress becomes a problem when the body is constantly under pressure, it will reach a stage that, the brain and its coordinating assistance are overwhelmed and worn out. Consequently the stressed people are constantly are prone to the following: anxiety, anger, irritability, depression, fatigue, difficulty in concentrating, low self-esteem, headaches and pains, sleeplessness, alcoholism, asthma, skin rashes, teeth grinding, high blood pressure etc. Work-related stress has attracted the attention of psychologists and mental practitioners as a result of high rate of suffering from stress. According to the Four European Working Survey Eurofound, [5] carried out in 2005, 22% of European workers reported lower backache, muscular pain and fatigue owing to stress. Stress associated with work has been related to a number of other ill-health

outcomes, such as cardiovascular diseases [6, 7], also musculoskeletal disorders particularly back problems [8] and neck-shoulder-arm-wrist-hand problems [9] as well as absence from work [10]. Over the past decades, the world has seen a shift of industry and services to developing countries [7]. This often seems to be connected to higher productivity and multinationals have been reported to often enjoy the absence of (or presence of weak) regulatory systems to benefit their profit margins [11, 12] resulting in jobs hazardous to workers' health. Generally, the growth of large multinational companies has been associated with a greater decentralization, outsourcing and flexible work environments, with wide variations in the conditions of work and in exposure to occupational hazards [7, 13]. Without effective interventions internationally, the process of globalization could be used to take advantage of vulnerable people [14]. Voyer's [14, 15] argument becomes even stronger with the fact that 80% of the world's GDP is produced in industrialized countries and only about 20% in developing countries. In other words, one fifth of the world's working population produces four fifths of the world GDP [15, 16]. It follows that wealth and prosperity are extremely unequally shared between developing and industrialized countries. This is despite the fact that 80% of the global workforce resides in the developing world [17], and is employed in unhealthy and unsafe working conditions [15, 18]. In Thomas *et al.*, [19], research has shown that there are a number of factors that contribute to stress at workplace which include hazardous environment, negative workload, isolation, types of hours worked, role conflict, role ambiguity, lack of autonomy, career development barriers, difficult relationships with administrators and/ or coworkers, managerial bullying, harassment, and organizational climate. Chen *et al.*, [20], in their study shows the association of mental health with occupational stress, coping styles and their interaction among workers in Chinese offshore oil platform. Kumar [21] studies found that job stress is the major cause for job dissatisfaction, which creates disturbances in quality of life, so it results to unhappiness. Jahanian *et al.*, [22], in their work the moderating roles of job control and work-life balance practices on employee stress in the hotel and catering industry concluded that stress is a fact in our daily life. Chiang *et al.* [23] concluded that job demands, job control and work-life balance significantly affected job stress in such a way that high job demands when combined with low job control and minimal work-balance practices contributing to a higher level of work stress. Johnson *et al.*, [24], study shows influence of musculoskeletal disorder in industrial workers in Tamil Nadu and the

study found that the for the optimization of the work system to minimize the risk of injury and to maximize productivity increases with the formidable knowledge of musculoskeletal disorders and its prevalence among industrial workers in various industries can be effectively applied. In Barhem *et al.*, [25] work, a new model for work stress patterns, they established a new work stress model by studying the major work stress sources and work stress coping strategies experienced by employees in the Malaysian and Jordanian Customs Department which in turn leads to, and evaluates the relationships between the various stress patterns analyzed. They identified that role ambiguity and self-knowledge are the main sources of work stress and major coping strategy. Stress in the workplace has been a topical problem among blue collar workers, say factory workers, construction workers, maintenance workers, manufacturing workers and the like. Mat factory workers are blue collar workers and are privately employed and mainly unorganized. Majority of them belong to the lower strata of socio-economic groups and are highly stressed. Stress may be personal or organizational such as unsafe and or uncomfortable work environments, lack of employ participation in organizational policies. Workplace stress is very costly. It contributes to low productivity, occupational illness, injury, absenteeism, poor employee morale and high health care costs Nigeria is considered to be as one of the highly developing country among the African countries in all sectors. Even though the development is in propaganda, there are no adequate measures and policies that guarantee the safety and health of their employees. The prevalence of job stress in any occupational sector is unavoidable. Hence its impact in industries will be large. The impact and consequences of stress have been found to be fairly widespread, implicating changes in behavior, mood, capacity to perform mental tasks and neuropsychological functioning. Psychological stimuli operate on persons each of whom is equipped with an individual psychological programme for relating to any type of internal or external stimuli. These programmes are propensities conditioned by a vast array of genetic and earlier environmental influences. When the environment fails to meet personal demands, it awake a host of pathogenic mechanisms which may be cognitive, emotional behavioral, and or physiological [26]. The aim of this study is to find out the impact of work stress among mat factory workers in Kano, Nigeria and to suggest better strategies to overcome work stress among the workers.

## MATERIALS AND METHODS

### *Data Collection Methods*

140 sets of questionnaire were distributed to mat workers from 13 mat factories in Challawa and Bompai Industrial Estates of Kano, Nigeria. Studied participants are randomly selected from mat workers in the two industrial estates. The questionnaire was distributed and collected after two weeks. There were no penalties or rewards for the participations to the respondents and all the questions were answered. Informed consent was implied when questionnaires were voluntarily completed and returned. Convenience sampling method under Non-Probability sampling was employed in selecting the sample. 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. To ensure greater clarity and validity pre-testing was done with limited number of respondents. The pilot study helped the researcher to narrow down the scope of the study and facilitated the selection of samples. The researchers have used a structured questionnaire as a research instrument tool in order to get data. This questionnaire is the data collection instrument used in the study. All the questions in the questionnaire are organized in such ways that obtain all the relevant information which are matched to the aim and needed for the study. Interview schedule method was also used to collect primary data from those that cannot read or write. The questionnaire consists of age, work experience, weight of carried loads, physical illness symptoms the person is affected with, job stress characteristics and lastly deals with additional details of the employee. The sampling technique using is stratified random sampling. To collect information in the deepest level, observation and guidance methods also were employed. Data on daily working hours were obtained by the time spent in the workplace. The validity and reliability of the questionnaire have been approved in different studies [27, 28]. Secondary data were collected from organizations records, documents, website, company's annual reports, brochure, Journals etc.

On the basis of the outcome of the pilot study, only factors like Management attitude, experiencing headache, increased blood pressure, increased absenteeism, unable to relax, concentrate and sleep, developed distressed and irritable, experience low back pain, joint and neck pain, feeling isolated from other people, feel tired, depressed and anxious, decreased commitment to work, increased smoking or and alcohol consumption have been used in the final Interview schedule. Respondents were instructed to indicate the importance of the impact of work stress factor by giving rank 1 to the most important factor, rank 2 to the second important factor, rank 3 the third important and so on. Based on

the ranks assigned by the order of importance is identified. To find the most significant factor Henry Garrett Ranking Technique is employed. It is calculated as a percentage score and the scale value is obtained by employing the scale conversion table given by Henry Garrett.

#### STATISTICAL TOOLS USED FOR ANALYSIS

Data collected through Research Schedule were presented in a master table. From the master table sub tables were prepared. In order to do the analysis and interpretation of the data simple statistical tools like Henry Garrett Ranking method was used. Analysis was done using PAST 2.17 software of University of Oslo. The following formula can be used for calculating the Henry Garrett Ranking Method.

The Percentage Score is calculated as = 
$$\frac{100(R_{ij} - 0.5)}{N_j}$$

Where:

$R_{ij}$  is Rank given for ith item jth individual

$N_j$  is number of items ranked by jth individual

The percentage score for each rank from 1 to 10 is calculated. The percentage score thus obtained for all the ten ranks is converted into scale values using Scale Conversion table given by Henry Garrett. The scale values for the first rank to tenth rank are 81, 70, 63, 57, 52, 47, 42, 36, 29 and 18 respectively. The score value (fx) is calculated for each factor by multiplying the number of respondents (f) with respective scale values (x). The total scores are found by adding the score values (fx) of each rank for every factor. The mean score is then calculated to know the order of preference given by the respondents for the factors. Based on the mean score, the overall ranks are assigned for each.

## RESULTS AND DISCUSSION

140 sets of questionnaire were distributed to the mat workers and 121 questionnaires come back to the researchers (response rate: 86.43%). 106 workers were male representing 87.60%. Their average age was  $32.52 \pm 4.50$  and average working experience was  $10.4 \pm 6.4$ . They workers worked in the company for an average 60 hours per week with a weekly shift. Detail distribution of age grouping and work experience is presented in Fig. 1 and 2. Most of the respondents are secondary school leavers (117 representing 96.69%) as their highest educational qualification. Among respondents 23 (19.01%) persons were smokers before joining the mat factory but presently 87 (71.90%) are smokers while 73 persons (60.33%) are married.

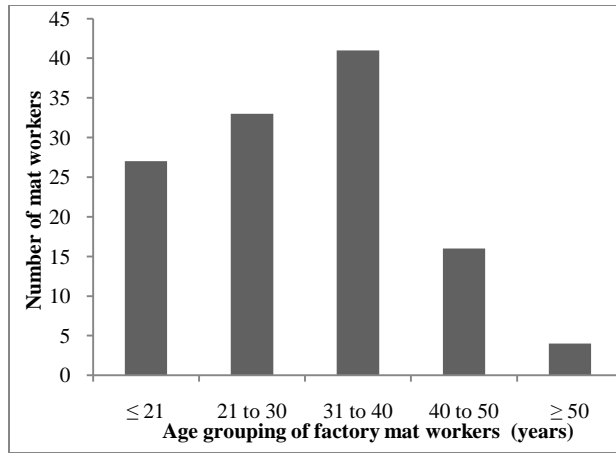


Fig. 1: Age grouping in mat factory

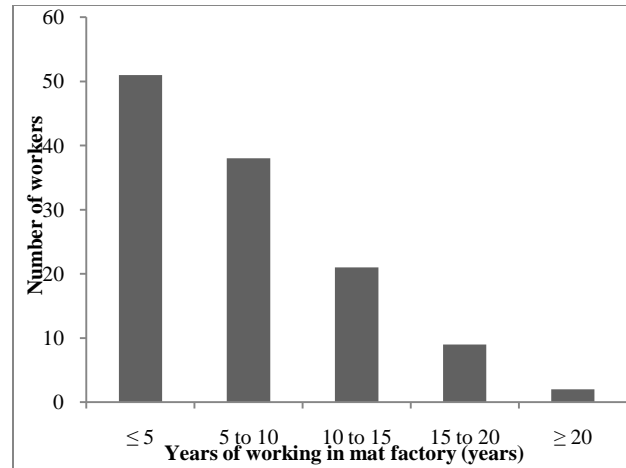


Fig. 2: Years working in mat factory

Table 1: Impact of stress among mat factory workers in Kano - Nigeria

	Rank	I	II	III	IV	V	VI	VII	VIII	IX	X	$\Sigma f$	$\Sigma fx$	Mean	Rank
<b>Factors</b>	Scores	81	70	63	57	52	47	42	36	29	18				
<b>Attitude towards management</b>	f	25	15	23	14	6	9	9	14	2	4	121	7069	58.42	2
	fx	2025	1050	1449	798	312	423	378	504	58	72				
<b>Feeling tired, depressed</b>	f	14	20	24	18	10	5	13	10	1	6	121	7870	65.04	1
	fx	1134	2400	1512	1026	520	235	546	360	29	108				
<b>Unable to relax and sleep</b>	f	15	16	16	14	18	16	6	3	10	7	121	6609	54.62	4
	fx	1215	1120	1008	798	936	756	252	108	290	126				
<b>Back, joints and neck pains</b>	f	10	12	13	10	28	12	16	2	9	9	121	6226	51.45	6
	fx	810	840	819	570	1456	564	672	72	261	162				
<b>Headache and blood pressure</b>	f	15	12	30	26	7	5	1	5	12	8	121	6740	55.70	3
	fx	1215	840	1890	1482	364	235	42	180	348	144				
<b>distressed and irritable</b>	f	12	9	6	19	25	14	13	12	5	6	121	6249	51.64	5
	fx	972	630	375	1083	1300	658	546	432	145	108				
<b>Increased Absenteeism</b>	f	8	12	5	10	7	9	12	17	15	26	121	5179	42.80	7
	fx	648	840	315	570	364	423	504	612	435	468				
<b>Moodiness and feeling lonely</b>	f	4	8	1	6	4	26	18	12	20	22	121	4883	40.36	10
	fx	324	560	63	342	208	1222	756	432	580	396				
<b>Decreased commitment to Work</b>	f	10	7	2	2	7	9	21	20	25	18	121	4975	41.12	9
	fx	810	490	126	114	364	423	882	720	722	324				
<b>Increased smoking &amp; Alcohol consumption</b>	f	8	10	1	2	9	16	12	26	22	15	121	5093	42.09	8
	fx	648	700	63	114	468	752	504	936	638	270				
$\Sigma f$		121	121	121	121	121	121	121	121	121	121				

According to results of Henry Garrett Ranking shown on Table 1, feeling tired, depressed and anxious rank first, management attitude towards workers vis vassal rank second this is not surprising since the owners of the factory treats it workers like slaves hence management attitude, working environment might be the main cause of the developed stress among mat workers and experiencing headache and blood pressure rank third. Thomas et al., [19] in their research they shown that there are a number of factors that contribute to workplace stress which include toxic work environment, negative workload, isolation, types of hours worked, role conflict, role ambiguity, lack of autonomy, career development

barriers, difficult relationships with administrators and/ or coworkers, managerial bullying, harassment, and organizational climate. This is the real situation in most of the mat factories studied. Unable to relax, concentrate and sleep, distressed and irritable, low back pain, Joint & neck pain rank fourth, fifth and sixth respectively. Others are increased absenteeism, increase alcohol and smoking, decrease commitment to work in that order lastly was the moodiness and feeling lonely. This result is consistent with previous research suggesting significant associations between sickness absence and physical load, and risk factors in the work environment [29, 30]. Cox [31] also wrote that should the stressors continue, the

employee is at significant risk of developing physiological and psychological disorders that can lead to increased absenteeism, organizational dysfunction, and decreased work productivity. This is true of the situation were the following was observed among the mat workers during personal interview Skin disorder which is physical consequences, anger, feeling of insecurity and helplessness which are psychological consequences. Others are sudden change in social habits, wrinkling forehead and nail biting which are emotional consequences. This work also agrees with the finding of other researchers that shift workers were more likely to have high-strain jobs than other workers (29% vs. 22%) [32], poorer general health and higher levels of work stress among shift workers [33, 34]. The high incidence might also be due to uncomfortable working postures, manual material handling and long hours of standing at works, which were common at almost all workstations and job activities studied. The study has some limitations; the educational level of the respondent may have an effect on the results and we had not any measurement scale for measuring the intensity of the pain/discomfort which was reported by respondents.

## CONCLUSION

It is clear from the values available that work stress is a real challenge for mat factories workers in Kano – Nigeria. For the employers not only is it important to monitor the workplace, identify and deal with stress problems but to promote healthy work and reduce harmful aspects of work. A good employer designs and manages work in a way that avoids common risk factors and prevent as much as possible foreseeable problems. Employers, managers and trade union representatives must therefore become aware of the culture of the organization and explore it in relation to the management of work stress. This research work further provides some additional structure to the scarce ex-isting evidence base. The aim is to get employers, employees, policy-makers and researchers to increase their awareness and understanding of these issues in developing countries. Similarly it is hoped that they further study the potential impact of work-related stress and psychosocial risks on workers' health, delineate some priorities for action in occupational health and safety, and psychosocial risks and work-related stress in particular. And lastly, it is hoped that they may be stimulated to think about an adequate research paradigm that goes beyond the workplace and takes into account a number of macro-issues that influence the context and the content of the working environment in developing countries.

## ETHICAL ISSUES

The present study has no ethical issues. The study was undertaken so as to understand the consistent complain of stress among factory workers in Kano, Nigeria.

## CONFLICT OF INTERST

Authors of the manuscript did not have any conflict of interest.

## AUTHORS' CONTRIBUTION

Oyelaran, Olatunde Ajani designed the study, revised the final draft of the manuscript and did statistical analysis. Tuduwada, Yau Yusuf supervised and coordinated study data. Abidoye, James Kehinde distribute, collate and draft this report. Sanusi, Olawale Mansur did the distribution and collection of questionnaire and reviewing the final version of the manuscript.

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