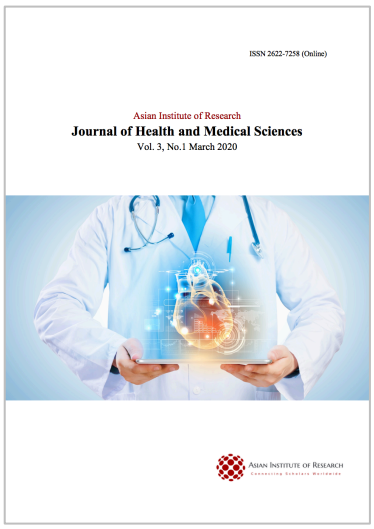

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Tracing Symptoms of Psychological Health Status Among Construction Employees

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Abstract
Psychological health condition is known to be complex and multidimensional, with several scales developed as measures of its symptoms. The absence or presence of negative symptoms has been used to describe the state of psychological well-being and psychological ill-being, respectively. This study gathered 48 validated items from previous studies as symptoms of psychological health conditions. The 48 symptoms identified were explored among 300 construction employees in Ghana to determine their psychological health status. Thematic analysis was used to group the 48 symptoms into four main constructs, namely: physical symptoms, emotional symptoms, cognitive symptoms, and behavioral symptoms. A comparative analysis was conducted with the two groups of respondents, namely construction professionals and construction trade workers, to identify the group that is more prevalent with psychological well-being or ill-being conditions. The findings revealed that a significant number of the respondents had experienced the negative symptoms of psychological health conditions. The study also revealed statistically significant differences in the level of experience of psychological health conditions among the two construction employees, with psychological ill-being conditions found to be more prevalent in construction trade workers than the construction professionals. The findings from the study confirm the need to develop preventive psychological health management models for construction employees. The 48 symptoms put together as a measure for psychological health status had an acceptable internal consistency and reliability, and hence can be adopted by researchers and stakeholders to determine psychological health status. This study, therefore, makes an impactful contribution to the field of occupational health psychology.

Keywords: Psychological Health, Psychological Symptoms, Construction Industry, Construction Workers, Ghana

1. Introduction

Psychological health condition could be described as a condition in which the indicators are relatively constant; however, the psychological health condition itself could be dynamic (Russell, 2003; Fordjour, et. al., 2019a). The positive psychological health condition, also known as psychological well-being, is usually based on individuals' subjective feelings and experiences (Russell, 2003). The main indicators of psychological well-being conditions of workers are job satisfaction and work engagement (O'Donoghue, et. al., 2016). The adverse psychological health conditions, also known as psychological ill-being, are known to exist in all professions, with the common ones been stress, depression, and anxiety (Dragano, et. al., 2005). The main indicators of

psychological ill-being conditions of workers are workaholism and burnouts (Bakker and Bal, 2010; O'Donoghue, et. al., 2016).

Psychological health conditions of employees usually emanate from many interpersonal and organizational factors (Richman, et. al., 2001; Fordjour, et. al., 2020b; Bowen, et. al., 2014). The psychological health of construction workers can have severe consequences on the overall job outcomes of the construction firm (Fordjour, et. al., 2020a). It is of the essence for construction industries to pay critical attention to the psychological health of their workers and to understand causative factors that lead to workers' psychological ill-being and adopt preventive measures to mitigate its effects (Fordjour, et. al., 2019c). Research in occupational health investigates mainly physical health, with limited attention on the psychological health of individuals in the construction industry (Chan, et. al., 2016). Albeit the number of research works that have been carried out on health, there has been diminutive research attention on assessing the psychological health conditions of employees in the construction industry, especially those in developing countries. It has become necessary to conduct an empirical investigation to trace the symptoms of psychological health conditions among construction employees in a developing country, specifically Ghana.

2. Background of Study

Occupational health management continues to be a priority issue for those working and managing the construction industry across the world (Fordjour, et. al., 2019b). Studies have shown that psychological health conditions of construction workers could have an impact on the construction company (Chan, et. al., 2016; Leung, et. al., 2017; Fordjour, et. al., 2020a). The client's work satisfaction could be directly influenced positively by the workers' psychological well-being conditions (Salanova, et. al., 2005). Psychological ill-being conditions of workers, on the other hand, could negatively impact the financial returns of the construction firm (Xanthopoulou, et. al, 2013). Poor psychological health conditions of workers could also lead to some negative proactive behaviors at the construction workplace such as aggression, hostility, and offensive behaviors (Miner and Glomb, 2010; Bakker and Xanthopoulou, 2009).

The predominant sign of psychological ill-being conditions of workers at the construction workplace could be the frequent absenteeism of the construction worker (Fordjour, et. al., 2020a). The rate of absenteeism or sick leave could be high, especially in cases where construction workers are exposed to poor working and environmental conditions, leading to psychological ill-being conditions of Burnout and the workers may take longer duration to be absent from duties (Peterson, et. al., 2008; Schaufeli, et. al., 2009). The consequences of such occurrences could have a negative impact on the construction industry and the nation's economy, as it diminishes productivity, affect the overall work performances negatively and lowers the population of the workforce (Quartey and Bill, 2012). Poor psychological health conditions could have a direct impact on the productivity and work performance of the construction workers, which could be seen in the individual and team's work job outcomes (Halbesleben and Wheeler, 2008). Identifying the symptoms of psychological ill-health among the construction employees will promote the awareness of the conditions for appropriate measures to be taken to mitigate its causes and effects.

2.1 Research materials on symptoms of psychological health status

The World Health Organization (WHO) (2005), advocated that an individual's psychological health condition should be assessed based on the complete mental, physical and social well-being of the person, and not merely the absence of a particular condition, disease or infirmity. Adverse occupational psychological health conditions such as workaholism and burnout can lead to impaired well-being like fatigue, chronic tension, sleep problems, and other physical diseases (Russell, 2003; O'Donoghue, et. al., 2016). Indicators of adverse psychological health conditions can be grouped under physical, emotional, behavioral, and cognitive symptoms (Ademola, 2005).

A total of 48 items were identified from the extensive literature review of previous studies to assess the psychological health status of the construction professionals and construction trade workers (Leung, et. al., 2017; Enshassi, et. al, 2016; O'Donoghue, et. al., 2016; Magotra, 2016; Quick and Henderson, 2016; Bowen, et. al.,

2014; Ademola, 2005; Mehta and Chaudhary, 2005; Russell, 2003). The 48 symptoms identified were grouped under four major constructs of psychological health symptoms, namely: physical symptoms, emotional symptoms, cognitive symptoms, and behavioral symptoms. These four major constructs were analysed to determine the inter-item consistency and reliability. The measures used to assess whether the research participants were experiencing psychological well-being or ill-being condition, as shown in Table 1.

Table 1. Measures identified from extensive literature reviews

Label	Symptoms of psychological health condition
Construct 1: Physical Symptoms	
S1	Physically exhausted/ Worn-out/ Tired
S2	Muscular tension/aches
S3	Feeling nauseous/ stomachache/ diarrhoea/ indigestion
S4	Chest pain
S5	Increased rate of heartbeat
S6	Shallow or rapid breathing
S7	Lower Back Pain
S8	Chronic Headaches
S9	Skin Problems
S10	Blood in Urine or Urinate frequently
Construct 2: Emotional Symptoms	
S11	Tensed/ Stressed
S12	Worried
S13	Irritable
S14	Sad/ Depressed
S15	Emotionally exhausted
S16	Numbness
S17	Discouraged
S18	Anxious
S19	Frustration
S20	Mood swings
S21	Bitterness
S22	Rage
S23	Resentment
S24	Crying for no particular reason
S25	Palpitations/ perspiration/ sweaty hands
S26	Trembling/ Nervous ticks/ Butterflies in Stomach
Construct 3: Cognitive Symptoms	
S27	Hard to concentrate
S28	Difficult to think clearly, make decisions or remember things
S29	Insomnia/ difficulty sleeping
S30	Addiction to ungodly habits
S31	Difficulty relaxing
S32	Increase addiction of smoking, alcohol, and use of drugs
S33	Accident- prone
S34	Problems with speaking
S35	Brood on previous harm or insults
S36	Magnify issues such as injury and hurt
S37	Exaggerate unfairness
Construct 4: Behavioural Symptoms	
S38	Impulsive behavior
S39	Poor self-care
S40	Grinding of teeth
S41	Social isolation and withdrawal
S42	Laughing or speaking in high pitch
S43	Label or blame others for our problems
S44	Have conflict with others
S45	Yells at people
S46	Hostile to people

S47	Gives sarcastic comments
S48	Physically aggressive

Source: Leung, et. al., 2017; Enshassi, et. al, 2016; O'Donoghue, et. al., 2016; Magotra, 2016; Quick and Henderson, 2016; Bowen, et. al., 2014; Ademola, 2005; Mehta and Chaudhary, 2005; Russell, 2003.

3. Research Methodology

To explore the symptoms of psychological health conditions among construction professionals and construction trade workers, this study adopted the methods of survey questionnaires. A target of 300 participants comprising of 150 construction professionals and 150 construction trade workers were set for this study. The respondents were selected from thirty-two (32) construction companies in Ghana. A non-probability sampling technique, specifically the purposive sampling method, was adopted in selecting the research participants. The construction professionals group comprised of architects, engineers, quantity surveyors, contractors, supervisors, construction managers, and project managers. The construction trade working group also includes carpenters, masons, plumbers, steel benders, and plant operators.

3.1 Ethical Considerations

The American Psychological Association (APA) has provided some ethical code guidelines to guide the conduct of research in psychology. The goal of this code is to protect the rights and welfare of the survey respondents or groups who partake in a study (Fordjour, et. al., 2019d). In the conduct of the present study, the researcher paid attention to ensuring the APA guidelines were adhered to the latter throughout the conduct of the study. In the selection of research participants, for instance, under no circumstance was coercion or inducement utilized. Only persons who were willing to participate in the study utilized for the research.

As directed by the APA guidelines, informed consent, right to decline participation at any point of the research was strictly adhered to. The participants were therefore informed at the beginning of their right to drop out of the study at any point they wished. Confidentiality of the responses of the participants was also adhered to at every step of this study. Consent forms were also used to assure the participants of the confidentiality of their responses. Total anonymity of the participants was considered with a focus on the appropriate research design method.

3.2 Questionnaire design

This research aimed at identifying whether the participants were in a positive or negative state of occupational psychological conditions based on the responses provided. The questionnaire design was based on the 48 validated symptoms identified from the extensive literature reviews. Closed-ended questions were suitable for the quantitative nature of the survey questionnaire. The research questions were developed to suit the measures adopted by this study. The respondents were requested to indicate how often they have experienced each of the symptoms listed by circling the appropriate scale under the 6-point Likert scale. The following frequency qualifications were used 'Very frequently (that is, more than 2 times a day) rated as 6 points, 'Frequently (that is, 1 to 2 times a day)' rated as 5 points, 'Occasionally (that is, 2 to 3 times a week)' rated as 4 points, 'Rarely (that is, 2 to 3 times a month)' rated as 3 points, 'Very rarely (that is, once a month or less)' rated as 2 points and 'Not at all' rated as 1 point.

The 1 to 6 Likert scale adopted by this study was intended for an equal approximation of the descriptive statistics of the responses to determine where the respondent was in a positive state of psychological well-being or a negative state of psychological ill-being. Using this scale, data transformation was made possible by grouping the scales into two, with 1 to 3 scales assigned with value "7" to indicate a positive state of psychological well-being. Likewise, 4 to 6 scales assigned with value "8" to indicate a negative state of psychological ill-being.

A pilot study was conducted with 15 occupational health psychologists with more than 10 years of working experience, to test the appropriateness of the questionnaires by reviewing it. This initial exercise confirmed the content validity of the questionnaire and its appropriateness to determine the psychological health status of the research participants.

3.3 Hypothesis Testing Approach

The null hypothesis, (H_0), assumed there is no statistically significant difference between the scores of construction professionals "a" and construction trade workers "b" in psychological well-being or ill-being state for all indicators measured.

If the p-value ≤ 0.05, this means the difference in the scores is statistically significant, and hence the null hypothesis will be rejected, and the alternative hypothesis considered.

If the p-value ≥ 0.05, this means the difference in the scores is not statistically significant, and hence the null hypothesis will not be rejected.

3.4 Data analysis

The responses provided by the participants were used to determine whether a participant based on a measure was in a state of psychological well-being or ill-being. Using the Statistical Package for Social Scientists (SPSS) version 19, the data obtained was transformed and recoded into different variables. The old values of 1, 2, and 3 were changed to the value of 7 to indicate the positive state of psychological well-being. The old values of 4, 5, and 6 were also changed to the value of 8, to indicate the negative state of psychological ill-being. The data were analyzed using descriptive statistics, with the frequency and percentage scores of the positive state and negative state of the two construction working groups compared and presented in Table 2.

Independent two-sample T-test analysis was also done to test the significance of the difference between the scores obtained from the construction professionals' group and the scores obtained from the construction trade workers group. Levene's test for equality of variances was used for this test; the F values and Significant or P values obtained for each indicator measured have been presented in Table 3. The internal consistency and reliability of the indicators under each construct were measured, and the Cronbach Alpha values also presented in Table 3.

The frequency and percentage scores of the four main constructs were determined, and the scores obtained from the two-construction working group also compared to indicate which of the two construction groups were more prevalent in a positive or negative occupational psychological state. Table 4 presents this result. The following mathematical formulas were used:

Frequency score for a construct = summation of the total number of responses for all indicators under the construct.

$$\textbf{Percentage score for a construct} = \frac{\text{Frequency score for the category}}{\text{Total number of expected responses}} \times 100\%$$

Total number of expected responses = number of participants (150) × number of indicators under a specific construct

$$\textbf{Average frequency score for all constructs} = \frac{Cummulative\ frequency\ score}{Number\ of\ constructs}$$

$$\textbf{Average percentage score for all constructs} = \frac{Cummulative\ percentage\ score}{Number\ of\ constructs}$$

(Source of the formula: Norussi, 2001)

4. Results and Discussion

4.1 Results

Data transformation was done, and the respondents who chose from 1 to 3 scale for any of the measures were indicated to be in a negative state of psychological ill-being for that measure. Likewise, the respondents who chose from 4 to 6 scale for any of the measures were indicated to be in a positive state of psychological well-being for that measure. The results of the frequency distribution and percentage distribution are presented in Table 2. Values marked with ([a]) represent scores from the construction professionals' group and values marked with ([b]) represent scores from the construction trade workers' group.

Table 2: Results of the psychological state of construction professionals[(a)] and construction trade workers [(b)]

			Frequency values (150 participants each)		**Percentage values**	
Construct	**No.**	**Measure for Symptoms**	***Well-being State***	***Ill-being State***	***Well-being State***	***Ill-being State***
Physical Symptoms	S1	Physically exhausted/ Worn-out/ Tired	60 [a], 42 [b]	90 [a], 108 [b]	40% [a], 28% [b]	60% [a], 72% [b]
	S2	Muscular tension / aches	64 [a], 49 [b]	86 [a], 101 [b]	43% [a], 33% [b]	57% [a], 67% [b]
	S3	Feeling nauseous/ stomachache/ diarrhoea/ indigestion	66 [a], 68 [b]	84 [a], 82 [b]	44% [a], 45% [b]	56% [a], 55% [b]
	S4	Chest pain	106 [a], 101 [b]	44 [a], 49 [b]	71% [a], 67% [b]	29% [a], 33% [b]
	S5	Increased rate of heartbeat	117 [a], 46 [b]	33 [a], 104 [b]	78% [a], 31% [b]	22% [a], 69% [b]
	S6	Shallow or rapid breathing	97 [a], 79 [b]	53 [a], 71 [b]	65% [a], 53% [b]	35% [a], 47% [b]
	S7	Lower Back Pain	60 [a], 47 [b]	90 [a], 103 [b]	40% [a], 31% [b]	60% [a], 69% [b]
	S8	Chronic Headaches	53 [a], 50 [b]	97 [a], 100 [b]	35% [a], 33% [b]	65% [a], 67% [b]
	S9	Skin Problems	101 [a], 81 [b]	49 [a], 69 [b]	67% [a], 54% [b]	33% [a], 46% [b]
	S10	Blood in Urine or Urinate frequently	93 [a], 77 [b]	57 [a], 73 [b]	62% [a], 51% [b]	38% [a], 49% [b]
Emotional Symptoms	S11	Tensed/ Stressed	62 [a], 54 [b]	88 [a], 96 [b]	42% [a], 36% [b]	58% [a], 64% [b]
	S12	Worried	74 [a], 66 [b]	76 [a], 84 [b]	49% [a], 44% [b]	51% [a], 56% [b]
	S13	Irritable	96 [a], 81 [b]	54 [a], 69 [b]	64% [a], 54% [b]	36% [a], 46% [b]
	S14	Sad/ Depressed	80 [a], 69 [b]	70 [a], 81 [b]	53% [a], 46% [b]	47% [a], 54% [b]
	S15	Emotionally exhausted	102 [a], 79 [b]	48 [a], 71 [b]	68% [a], 53% [b]	32% [a], 47% [b]
	S16	Numbness	119 [a], 82 [b]	31 [a], 68 [b]	79% [a], 55% [b]	21% [a], 45% [b]
	S17	Discouraged	62 [a], 60 [b]	88 [a], 90 [b]	41% [a], 40% [b]	59% [a], 60% [b]
	S18	Anxious	70 [a], 74 [b]	80 [a], 76 [b]	47% [a], 49% [b]	53% [a], 51% [b]
	S19	Frustration	61 [a], 59 [b]	89 [a], 91 [b]	41% [a], 39% [b]	59% [a], 61% [b]
	S20	Mood swings	98 [a], 84 [b]	52 [a], 66 [b]	65% [a], 56% [b]	35% [a], 44% [b]
	S21	Bitterness	66 [a], 58 [b]	84 [a], 92 [b]	44% [a], 39% [b]	56% [a], 61% [b]
	S22	Rage	91 [a], 89 [b]	59 [a], 61 [b]	61% [a], 59% [b]	39% [a], 41% [b]
	S23	Resentment	90 [a], 83 [b]	60 [a], 67 [b]	60% [a], 55% [b]	40% [a], 45% [b]
	S24	Crying for no particular reason	118 [a], 97 [b]	32 [a], 53 [b]	79% [a], 65% [b]	21% [a], 35% [b]
	S25	Palpitations/ perspiration/ sweaty hands	72 [a], 71 [b]	78 [a], 79 [b]	48% [a], 47% [b]	52% [a], 53% [b]

	S26	Trembling/ Nervous ticks/ Butterflies in Stomach	70 [a], 57 [b]	80 [a], 93 [b]	47% [a], 38% [b]	53% [a], 62% [b]
Cognitive Symptoms	S27	Hard to concentrate	74 [a], 67 [b]	76 [a], 83 [b]	49% [a], 45% [b]	51% [a], 55% [b]
	S28	Difficult to think clearly, make decisions or remember things	52 [a], 51 [b]	98 [a], 99 [b]	35% [a], 34% [b]	65% [a], 66% [b]
	S29	Insomnia/ difficulty sleeping	49 [a], 44 [b]	101 [a], 106 [b]	33% [a], 29% [b]	67% [a], 71% [b]
	S30	Addiction to ungodly habits	122 [a], 99 [b]	28 [a], 51 [b]	81% [a], 66% [b]	19% [a], 34% [b]
	S31	Difficulty relaxing	48 [a], 41 [b]	102 [a], 109 [b]	32% [a], 27% [b]	68% [a], 73% [b]
	S32	Increase addiction of smoking, alcohol and use of drugs	107 [a], 91 [b]	43 [a], 59 [b]	71% [a], 61% [b]	29% [a], 39% [b]
	S33	Accident- prone	56 [a], 33 [b]	94 [a], 117 [b]	37% [a], 22% [b]	63% [a], 78% [b]
	S34	Problems with speaking	79 [a], 109 [b]	71 [a], 41 [b]	53% [a], 73% [b]	47% [a], 27% [b]
	S35	Brood on previous harm or insults	110 [a], 96 [b]	40 [a], 54 [b]	73% [a], 64% [b]	27% [a], 36% [b]
	S36	Magnify issues such as injury and hurt	114 [a], 82 [b]	36 [a], 68 [b]	76% [a], 55% [b]	24% [a], 45% [b]
	S37	Exaggerate unfairness	109 [a], 100 [b]	41 [a], 50 [b]	73% [a], 67% [b]	27% [a], 33% [b]
Behavioural Symptoms	S38	Impulsive behaviour	101 [a], 91 [b]	49 [a], 59 [b]	67% [a], 61% [b]	33% [a], 39% [b]
	S39	Poor self-care	131 [a], 53 [b]	19 [a], 97 [b]	87% [a], 35% [b]	13% [a], 65% [b]
	S40	Grinding of teeth	112 [a], 107 [b]	38 [a], 43 [b]	71% [a], 72% [b]	25% [a], 29% [b]
	S41	Social isolation and withdrawal	67 [a], 55 [b]	83 [a], 95 [b]	45% [a], 37% [b]	55% [a], 63% [b]
	S42	Laughing or speaking in high pitch	110 [a], 105 [b]	40 [a], 45 [b]	70% [a], 71% [b]	27% [a], 30% [b]
	S43	Label or blame others for our problems	65 [a], 72 [b]	85 [a], 78 [b]	43% [a], 48% [b]	57% [a], 53% [b]
	S44	Have conflict with others	64 [a], 69 [b]	86 [a], 81 [b]	43% [a], 46% [b]	57% [a], 54% [b]
	S45	Yells at people	95 [a], 88 [b]	55 [a], 62 [b]	63% [a], 59% [b]	37% [a], 41% [b]
	S46	Hostile to people	96 [a], 83 [b]	54 [a], 67 [b]	64% [a], 55% [b]	36% [a], 45% [b]
	S47	Gives sarcastic comments	84 [a], 104 [b]	66 [a], 46 [b]	56% [a], 69% [b]	44% [a], 31% [b]
	S48	Physically aggressive	114 [a], 102 [b]	36 [a], 48 [b]	76% [a], 68% [b]	24% [a], 32% [b]

Ranking of the symptoms, according to the most prevalent, was assessed among the two construction groups and within each group of construction professionals and construction trade workers. The results of the ranking have been presented in Table 3.

Table 3. Ranking of the prevalence of the symptoms among the construction professionals' (Group A) and construction trade workers (Group B)

			Ranks		
Construct	**No.**	**Measure for Symptoms**	**Between Groups**	**Within Group A**	**Within Group B**
Physical Symptoms	S1	Physically exhausted/ Worn-out/ Tired	4th	6th	3rd
	S2	Muscular tension / aches	8th	12th	7th
	S3	Feeling nauseous/ stomachache/ diarrhoea/ indigestion	15th	15th	18th
	S4	Chest pain	42nd	36th	43rd

	S5	Increased rate of heartbeat	23rd	44th	5th
	S6	Shallow or rapid breathing	26th	31st	26th
	S7	Lower Back Pain	7th	7th	6th
	S8	Chronic Headaches	5th	4th	8th
	S9	Skin Problems	31st	33rd	29th
	S10	Blood in Urine or Urinate frequently	24th	27th	25th
Emotional Symptoms	S11	Tensed/ Stressed	9th	9th	11th
	S12	Worried	19th	21st	16th
	S13	Irritable	27th	30th	28th
	S14	Sad/ Depressed	22nd	23rd	19th
	S15	Emotionally exhausted	30th	35th	27th
	S16	Numbness	40th	46th	31st
	S17	Discouraged	12th	10th	15th
	S18	Anxious	21st	18th	24th
	S19	Frustration	10th	8th	14th
	S20	Mood swings	33rd	32nd	34th
	S21	Bitterness	16th	14th	21st
	S22	Rage	29th	26th	36th
	S23	Resentment	25th	25th	33rd
	S24	Crying for no particular reason	44th	45th	40th
	S25	Palpitations/ perspiration/ sweaty hands	20th	19th	22nd
	S26	Trembling/ Nervous ticks/ Butterflies in Stomach	13th	17th	13th
Cognitive Symptoms	S27	Hard to concentrate	18th	20th	17th
	S28	Difficult to think clearly, make decisions or remember things	6th	3rd	9th
	S29	Insomnia/ difficulty sleeping	3rd	2nd	4th
	S30	Addiction to ungodly habits	48th	47th	41st
	S31	Difficulty relaxing	2nd	1st	2nd
	S32	Increase addiction of smoking, alcohol, and use of drugs	39th	37th	38th
	S33	Accident- prone	1st	5th	1st
	S34	Problems with speaking	37th	22nd	48th
	S35	Brood on previous harm or insults	41st	39th	39th
	S36	Magnify issues such as injury and hurt	38th	43rd	30th
	S37	Exaggerate unfairness	43rd	38th	42nd
Behavioural Symptoms	S38	Impulsive behavior	36th	34th	37th
	S39	Poor self-care	34th	48th	10th
	S40	Grinding of teeth	47th	41st	47th
	S41	Social isolation and withdrawal	11th	16th	12th
	S42	Laughing or speaking in high pitch	46th	40th	46th
	S43	Label or blame others for our problems	17th	13th	23rd
	S44	Have conflict with others	14th	11th	20th
	S45	Yells at people	32nd	28th	35th

S46	Hostile to people	28th	29th	32nd
S47	Gives sarcastic comments	35th	24th	45th
S48	Physically aggressive	45th	42nd	44th

Blom's fractional rank estimation test was used to assess whether the data obtained from the two construction working groups were normally distributed for all variables. The test revealed the data were normally distributed, and hence the results of the two groups could be compared for all the variables (Norussi, 2001; Fordjour, et. al., 2019c). The test statistics value of 0.05 was used to determine whether the difference between the scores obtained from the two construction groups was statistically significant. Values that indicate a statistically significant difference between the scores of the two groups are marked with (*). The results are presented in Table 4 with the Cronbach alpha values. The internal consistency and reliability test using Cronbach alpha values indicate that the inter-item consistency of all the four constructs was good. As reliability or internal consistency is considered unacceptable unless it is 0.7 or above (Enshassi, et. al., 2016). The Cronbach alpha values for the constructs, as shown in Table 4 ranges from 0.906 to 0.832.

Table 4: Results of the significance of the differences between the scores from construction professionals and construction trade workers group

Label	Symptoms of psychological health condition	Levene's Test		Cronbach Alpha
		F- value	P- value	
Construct 1: Physical Symptoms				***0.864***
S1	Physically exhausted/ Worn-out/ Tired	76.922	0.000*	0.739
S2	Muscular tension / aches	13.005	0.000*	0.769
S3	Feeling nauseous/ stomachache/ diarrhoea/ indigestion	0.211	0.646	0.864
S4	Chest pain	0.564	0.453	0.843
S5	Increased rate of heartbeat	11.716	0.001*	0.776
S6	Shallow or rapid breathing	12.659	0.000*	0.696
S7	Lower Back Pain	9.293	0.003*	0.752
S8	Chronic Headaches	11.931	0.001*	0.675
S9	Skin Problems	1.546	0.215	0.719
S10	Blood in Urine or Urinate frequently	8.769	0.003*	0.817
Construct 2: Emotional Symptoms				***0.906***
S11	Tensed/ Stressed	0.219	0.640	0.842
S12	Worried	1.418	0.235	0.855
S13	Irritable	9.826	0.002*	0.826
S14	Sad/ Depressed	0.053	0.818	0.904
S15	Emotionally exhausted	19.909	0.000*	0.851
S16	Numbness	18.072	0.000*	0.741
S17	Discouraged	0.842	0.360	0.872
S18	Anxious	0.589	0.443	0.904
S19	Frustration	0.484	0.487	0.852
S20	Mood swings	6.337	0.012*	0.859
S21	Bitterness	0.793	0.374	0.907
S22	Rage	0.494	0.482	0.865
S23	Resentment	2.459	0.118	0.883
S24	Crying for no particular reason	24.414	0.000*	0.661
S25	Palpitations/ perspiration/ sweaty hands	0.352	0.554	0.837
S26	Trembling/ Nervous ticks/ Butterflies in Stomach	2.909	0.089	0.884
Construct 3: Cognitive Symptoms				***0.832***
S27	Hard to concentrate	1.636	0.202	0.840
S28	Difficult to think clearly, make decisions or remember things	0.059	0.809	0.724
S29	Insomnia/ difficulty sleeping	2.269	0.133	0.711
S30	Addiction to ungodly habits	38.007	0.000*	0.727
S31	Difficulty relaxing	17.208	0.000*	0.832
S32	Increase addiction of smoking, alcohol and use of drugs	14.441	0.000*	0.803
S33	Accident- prone	33.669	0.000*	0.680

S34	Problems with speaking	61.471	0.000*	0.782
S35	Brood on previous harm or insults	0.528	0.468	0.795
S36	Magnify issues such as injury and hurt	49.552	0.000*	0.767
S37	Exaggerate unfairness	2.301	0.130	0.744
Construct 4: Behavioral Symptoms				***0.846***
S38	Impulsive behavior	5.569	0.019*	0.840
S39	Poor self-care	118.217	0.000*	0.816
S40	Grinding of teeth	1.085	0.298	0.761
S41	Social isolation and withdrawal	2.459	0.118	0.731
S42	Laughing or speaking in high pitch	0.267	0.606	0.824
S43	Label or blame others for our problems	1.873	0.172	0.807
S44	Have conflict with others	1.241	0.266	0.729
S45	Yells at people	2.64	0.105	0.818
S46	Hostile to people	8.015	0.005*	0.847
S47	Gives sarcastic comments	23.399	0.000*	0.773
S48	Physically aggressive	6.712	0.010*	0.822

*Significance values < 0.05 are marked with **

The detailed descriptions of the results of the indicators have been provided under their main constructs. The frequency and percentage scores of the four main constructs calculated by putting together the indicators have been presented in Table 5.

Table 5: Summary of results of the psychological state of construction professionals [(a)] and construction trade workers [(b)]

Constructs	Expected outcome	Total Frequency score		Percentage values	
		Positive State	***Negative State***	***Positive State***	***Negative State***
Physical Symptoms	1500	817 [a], 640 [b]	683 [a], 860 [b]	54% [a], 43% [b]	46% [a], 57% [b]
Emotional symptoms	2400	1331 [a], 1163 [b]	1069 [a], 1237 [b]	55% [a], 48% [b]	45% [a], 52% [b]
Cognitive Symptoms	1650	920 [a], 813 [b]	730 [a], 837 [b]	56% [a], 49% [b]	44% [a], 51% [b]
Behavioural Symptoms	1650	1039 [a], 929 [b]	611 [a], 721 [b]	63% [a], 56% [b]	37% [a], 44% [b]
All variables	7200	4107 [a], 3545 [b]	3093 [a], 3655 [b]	57% [a], 49% [b]	43% [a], 51% [b]

4.2 Discussion

4.2.1 Occupational psychological well-being and ill-being

The findings from the study revealed the absence and presence of the negative symptoms of psychological health conditions among both the construction professionals and construction trade workers. Psychological health conditions can manifest as physical symptoms, emotional symptoms, cognitive symptoms, and behavioral symptoms (Ademola, 2005). The responses of the level of frequency of experiencing the negative symptoms were used to determine whether the respondents were in the positive state of occupational psychological well-being condition or the negative state of occupational psychological ill-being condition.

The results indicate that construction trade workers were found to be more prevalent in the negative state of occupational psychological ill-being condition than the construction professionals. The results may be due to the stressful nature of the construction works, which are mainly executed by the construction trade workers (Bowen, et. al., 2014). Also, the construction trade workers usually undertake their works in the open under extreme weather conditions amidst the noise, chemical, and dust exposure (Fordjour, et. al., 2019a). In contrast, the major works of the construction professionals are carried out in office under comfortable temperature and lights (Langford, et. al., 2000). Construction trade workers such as masons, carpenters, steel benders and plumbers are therefore more likely to experience psychological ill-being conditions than the construction professionals such as architects, engineers and quantity surveyors (Fordjour, et. al., 2019a). Occupational psychological ill-being

conditions such as workaholism and burnout can lead to impaired wellbeing like fatigue, chronic tension, sleep problems and manifest diseases (Magotra, 2016; Bowen, et. al., 2014).

The key symptoms that were revealed among the two construction working groups included accident-prone, difficulty relaxing, insomnia, physically exhausted, and chronic headaches. Within the construction professionals' group, the most prevalent symptoms identified in the order of prevalence were difficulty relaxing, insomnia, difficulty to think clearly, make decisions or remember things, chronic headaches, and accident-prone. The most prevalent symptoms identified among the construction trade workers group in the order of prevalence also included accident-prone, difficulty relaxing, physically exhausted, insomnia, and increased rate of heartbeat.

The findings from this study confirm the statement of the World Health Organization (2001) that one (1) out of four (4) persons will suffer from one form of psychological or mental disorder in some point of their life. As the ecclesia goes, "many are crazy, but only a few are roaming". A mentally or psychologically ill person is not only the very dirty and unkempt ones who are seen on the street (Mehta and Chaudhary, 2005). The findings were also in conformity with the study of Dzirasah (2005), which revealed that about 60 to 70 percent of organizations visited in Ghana, had their workers having some form of psychological health problems with stress as the common one. Stress and other psychological ill-being diseases are gradually becoming the main source of mortality among Ghanaians (Dzirasah, 2005).

The p-value of most of the symptoms measured were less than 0.05, and this means the difference in the scores of the two groups were statistically significant. Hence the null hypothesis will be rejected, and the alternative hypothesis considered for those indicators. The psychological health symptoms from each of the main construct that revealed statistically significant differences between the two construction groups from each of the main constructs included physically exhausted, emotionally exhausted, difficulty relaxing, and poor self-care. The differences in the outcome of the results of the construction professionals and construction trade workers could be due to the differences in these characteristics: individual personality, age, marital status, gender, level of education, years of working experience, task level, role demands and income level (Bowen, et. al., 2014; Miao, et. al., 2017).

On the other hand, symptoms such as stomachache, tensed, hard to concentrate, and social isolation had their p-values greater than 0.05. This indicates that the difference in the scores of the two groups was not statistically significant; hence the null hypothesis will not be rejected for these other indicators. The similarities in the scores obtained from the construction professionals and construction trade workers indicate that these psychological indicators can affect any person regardless of their individual differences in various aspects (Mehta and Chaudhary 2005; Quick and Henderson, 2016). The World health report in the year 2001, revealed that about 450 million persons were suffering from psychological conditions such as stress, depression, and anxiety disorders, which has led to various forms of disability and ill-health globally (World Health Organization, 2001). The report also indicated that one in four persons in the world would be affected by psychological disorders at some point in their lives. The numbers presently are sure to have increased globally, and this is the reason why psychological health issues should be taken much seriously (Quartey and Bill, 2012; Fordjour, et. al., 2020a; Leung, et. al., 2017).

4.2.2. Physical Health symptoms

The findings from this study revealed physical health indicators of psychological ill-being among the two construction working groups, with the highest recorded ones as physically exhausted, chronic headaches, lower back pain, and muscular aches. The results indicate that construction trade workers, when assessed on the basis of physical symptoms, were more in the negative state of occupational psychological ill-being condition than the construction professionals.

Similar to the findings, Ademola, (2005) and Leung, et. al., (2017) also revealed that the workers' psychological ill-being can be manifested in the physical health of the person, with the person experiencing symptoms such as chronic fatigue, chest pain, rapid heartbeats, aches and pains, weakness, nausea, dizziness, diarrhoea or constipation, weight gain or loss, breathlessness, frequent colds, loss of sex drive, sweaty palms, hyperactivity,

muscular tension, tiredness, jaw clenching or teeth grinding. Workers' physiological problems such as fatigue, headaches, insomnia, and gastrointestinal disturbances have been linked with psychological ill-being such as burnout (Demerouti, et. al., 2001; Quick and Henderson, 2016).

4.2.3 Emotional Health symptoms

The findings from this study revealed that a significant number of both construction professionals and construction trade workers had experienced the emotional symptoms of psychological health conditions. The common emotional symptoms identified among the two construction working groups included tension, frustration, discouraged, trembling, and bitterness. Bono, et. al., (2007) stated that the emotional aspect of personality could reflect a person's psychological ill-being, with negative emotions leading to mental health disorders such as anxiety and depression. Emotional psychological health indicators are revealed to include feeling of being overwhelmed, irritability, mood swings, agitation, feeling tensed, inability to relax, frustration, depression, isolation, sense of loneliness, resentment and anger, substance abuse and on edge (Magotra, 2016; Mehta and Chaudhary, 2005; Ademola, 2005). Emotional problems are seen as the major indicators of burnout (Gakovic and Tetrick, 2003). The results of the study also revealed that the construction professionals, when assessed on the basis of emotional symptoms were more in the positive state of occupational psychology than the construction trade workers.

Psychological ill-being conditions such as burnout have been found to have significant relationship with various workers' emotional indicators of psychological ill-being conditions including decreases in self-esteem, depression, anxiety, feelings of helplessness, and irritability (Enshassi, et. al, 2016; O'Donoghue, et. al., 2016). Negative emotions, such as emotional exhaustion, can make workers feel very uncomfortable, which can negatively affect job performance at the workplace (Dragano, et. al., 2005; Ademola, 2005). The simplest definition of the concept of emotional exhaustion is given as depletion of emotional resources (Demerouti, et. al., 2001). Emotional exhaustion describes a feeling of being emotionally overextended and exhausted by one's work (Cropanzano, et. al., 2003).

4.3.4 Cognitive Symptoms

The findings from this study revealed that both construction professionals and construction trade workers who participated in the study had experienced cognitive symptoms of psychological health conditions. The most prevalent cognitive symptoms identified included accident-prone, difficulty relaxing, insomnia, difficulty to think clearly, make decisions, or remember things. The results indicate that the construction professionals when assessed on the basis of cognitive symptoms, were more in the positive state of occupational psychological well-being condition than the construction trade workers.

The mental scope and functionality of the workers are affected in various ways when cognitive psychological ill-being is present, with indicators such as: inability to concentrate, memory problems, seeing only the pessimistic, poor judgment, constant worry, anxiety, loss of objectivity and fearful anticipation (Mehta and Chaudhary, 2005; Ademola, 2005; O'Donoghue, et. al., 2016). Positive thought patterns evoke stronger emotions in workers enabling them to have greater involvement and engagement in work (Magotra, 2016).

4.2.5 Behavioral Symptoms

The findings from this study revealed behavioral symptoms among the two construction working groups, with the common ones being social isolation, have a conflict with others, and labeling or blaming others for one's problems. Occupational psychological ill-being can result in sudden changes in behavior, leading to unhealthy habits, including increase addiction to smoking and alcohol intake, weight loss or gain and poor lifestyle (Bono, et. al., 2007; Leung, et. al., 2017; Masood, 2013). Behavior changes can result from depersonalization or dehumanization (Sydney-Agbor, et. al., 2014). The diminished personal accomplishment or excessive negative evaluations of oneself can give rise to the insensitive behaviors of the worker toward others (Quick and Henderson, 2016). The results indicate that construction trade workers, when assessed on the basis of behavioral symptoms, were more in the negative state of occupational psychology than the construction professionals.

Attitude is considered by psychologists as a person's mental tendency to react in a certain manner, be it favorable or unfavorable, towards a certain aspect of reality (Faghhi and Allameh, 2012). Di-Martino (2003) stated that the negative actions of a worker could be due to stress, which is a physical and emotional response. The behavior indicators of psychological ill-being of workers are mainly antisocial, which can destroy the person's relationships with co-workers, friends, family, or even strangers (Enshassi, et. al., 2016). The negative actions arise when the expectations of one have not been met, the requirements of the job do not match one's capabilities, or there is a lack of or limited resources needed by the worker to do a job (O'Donoghue, et. al., 2016). Some of the behavior changes depicting workers' psychological ill-being include neglecting or procrastinating responsibilities, workplace or domestic violence, overreaction, increased arguments, sleeping too little or too much, eating disorder (Ademola, 2005; Di-Martino, 2003).

5. Conclusion

Previous studies have revealed that psychological ill-being could have adverse consequences on the individual employee's physical, mental, and social well-being. Psychological ill-being conditions of construction employees could lead to consequences for the construction industry, such as increases in turnover rate, decreases in job satisfaction, a general deterioration in work productivity, and poor performance outcomes. The devastating consequences of employees' psychological ill-health made it imperative that the research aimed to assess the current psychological health state of construction employees. This study was done by exploring 48 validated symptoms of psychological health conditions identified from literature reviews. The psychological health symptoms were grouped under physical symptoms, emotional symptoms, cognitive symptoms, and behavioral symptoms. The responses provided by the participants on how frequently they experience these symptoms using a 1-6 Likert scale, was used to assess whether a respondent was in a positive state of psychological well-being or a negative state of psychological ill-being.

A target of 300 questionnaires was equally distributed to construction professionals and construction trade workers in Ghana. A non-probability sampling technique, specifically the purposive sampling method, was adopted in selecting the research participants. Comparative analysis was done to indicate which of the two construction working groups was more prevalent in either a positive state of psychological well-being or a negative state of psychological ill-being. The findings from the study revealed that a significant number of construction employees had experienced the negative symptoms of psychological health conditions. The highly recorded symptoms identified among the two constructions groups were accident-prone, difficulty relaxing, insomnia, physically exhausted, and chronic headaches. These findings confirm the statement by the World Health Organization that every one (1) in four (4) persons in the world suffers from some symptoms of psychological ill-being condition.

The study revealed some statistically significant differences in the level of experiences of the symptoms of psychological health conditions. For instance, the symptom of difficulty relaxing, which was the predominant symptom among the construction professionals, was ranked as the 2nd symptom among the construction trade workers. Similarly, the symptom of accident-prone, which was the highest ranked symptom among the construction trade workers, was ranked as the 5th symptom among the construction professionals. The findings also indicated that psychological ill-being conditions were prevalent among the construction trade workers than the construction professionals, with more than 50% of them having experienced the negative symptoms of psychological health conditions.

The symptoms of poor psychological health conditions identified among the construction employees could have consequences undoubtedly on the ability of employees to carry out their construction works effectively, with an adverse effect on the construction industry. There is a need for occupational psychological support systems in the construction industry to enhance construction employees' health and promote their psychological well-being. Findings from the study provide valuable insights into the subject area, which can be built upon for future research studies in occupational psychology in the construction industry.

The study is limited in terms of the geographical setting of Ghana, where the research study was conducted. However, the findings from the study can be replicated in other countries, especially developing nations, where

their construction employees' health and well-being are not currently been given the much needed attention. It is recommended that further studies explore personal and construction work-related that could make construction employees vulnerable to psychological health conditions and adopt appropriate strategies to mitigate the causes and effects of these factors.

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References

Ademola, A. (2005). "Performance under stress: What the coaches should do". A paper delivered at the seminar on mental skill training in sport organized by National Institute for Sport, Lagos.

Bakker, A. B. and Bal, M. P. (2010). "Weekly work engagement and performance: A study among starting teachers". *Journal of Occupational and Organizational Psychology*, 83 (1), 189 - 206.

Bakker, A. B. and Xanthopoulou, D. (2009). "The crossover of daily work engagement: Test of an actor-partner interdependence model". *Journal of Applied Psychology*, 94, 1562 - 1571.

Bono, J. E., Folds, H. J., Vinson, G. and Muros, J. P. (2007). "Workplace emotions: The role of supervision and leadership". *Journal of Applied Psychology*, 92 (5), 1357-1367.

Bowen, P., Edwards, P., Lingard, H. and Cattell, K. (2014). "Workplace stress, stress effects, and coping mechanisms in the construction industry". *Journal of Construction Engineering and Management,* 140 (3), 1 – 24.

Chan, I. Y. S., Leung, M. Y. and Liu, A. M. M. (2016). "Occupational health management system: A study of expatriate construction professionals". *Accident Analysis and Prevention*, 93, 280 – 290.

Cropanzano, R., Rupp, D. E. and Byrne, Z. S. (2003). "The relationship of emotional exhaustion to work attitudes, job performance and organizational citizenship behaviors". *Journal of Applied Psychology*, 88 (1), 160-169.

Demerouti, E., Bakker, A. B., Nachreiner, F. and Schaufeli, W. B. (2001), "The job demands- resources model of burnout". *Journal of Applied Psychology*, 86 (3), 499-512.

Di-Martino, V. (2003). "Relationship between work stress and workplace violence in the health sector". International Labour Office, International Council of Nurses, World Health Organization,Geneva.

Dragano, N., Verde P. E. and Siegrist J. (2005). "Organisational downsizing and work stress: testing synergistic health effects in employed men and women". *J Epidemiol Community Health*, 59 (8), 694-699.

Dzirasah, K. (2005). "Let us Escape Stress Related Problems". Ghana newspaper agency. http://www.ghananewsagency.org.

Enshassi, A., Al. Swaity, E. and Arain, F. (2016). "Investigating common causes of burnout in the construction industry", International Journal of Construction Project Management, 8 (1), 43 – 56.

Faghihi A. and Allameh S. M. (2012). "Investigating the Influence of Employee Attitude toward Change and Leadership Style on Change Readiness by SEM (Case Study: Isfahan Municipality)". *International Journal of Academic Research in Business and Social Sciences,* 2 (11), 1-13.

Fordjour, G. A. and Chan, A. P. C. (2020a). "Exploring the effects of occupational psychological disorders on construction employees and the construction industry". *Occupational diseases and environmental medicine*, 8 (1), 1-25.

Fordjour, G. A., Chan, A. P. C., and Fordjour, A. A. (2020b). "Exploring potential predictors of psychological distress among employees: a systematic review". *International Journal of Psychiatry Research*, 3(1), 1-11.

Fordjour, G. A. and Chan, A. P. C. (2019a). "Exploring occupational psychological health indicators among construction employees: A study in Ghana". *Journal of Mental Health and Clinical Psychology,* 3(2), 6-18.

Fordjour, G. A., Chan, A. P. C. and Amoah, P. (2019b). "Exploring the need for occupational psychological health management and interventions in the construction industry: An empirical study in Ghana". The International Council for Research and Innovation in Building and Construction (CIB) World Building Congress 2019– Constructing Smart Cities.

Fordjour, G. A., Chan, A.P.C., Amoah, P. and Tuffour-Kwarteng, L. (2019c). "Coping Strategies Adopted by Construction Employees to Deal with the Causes and Effects of Occupational Psychological Disorders: A Study in Ghana". *Health*, 11, 755-782.

Fordjour, G. A., Chan, A. P. C. and Amoah, P. (2019d). "Exploring Personal Factors That Might Influence the Vulnerability of Construction Employees to Occupational Psychological Disorders". *Health*, 11, 546-566.

Gakovic, A. and Tetrick, L. E. (2003). "Psychological contract breach as a source of strain for employees". *Journal of Business and Psychology,* 18 (2), 235-246.

Halbesleben, J. R. and Wheeler, A. R. (2008). "The relative roles of engagement and embeddedness in predicting job performance and intention to leave". *Work and Stress*, 22 (1), 242 - 256.

Leung, M. Y., Liang, Q. and Chan, I. Y. S. (2017). "Development of a stressors-stress-performance-outcome model for Expatriate construction professionals". *Journal of Construction Engineering and Management,* 143 (5), 1-11.

Magotra, I. (2016). "Tracing stress symptoms: an empirical study of manufacturing industry". *Journal of Human Resource Management*, 16 (2), 44-55.

Masood, A. (2013). "Effects of Job Stress on Employee Relation: A study on Banking Sector of Pakistan". *International Journal of Scientific and Research Publications*, 3 (9), 2250- 3153.

Mehta, R. S. and Chaudhary R. N. (2005). "Job related stress among the nurses working in critical care areas at BPKIHS, Nepal". *Nursing and Midwifery Research Journal,* 1(2),70 – 76.

Miao, C., Humphrey, R. H. and Qian, S. (2017). "A meta-analysis of emotional intelligence and work attitudes". *Journal of Occupational and Organizational Psychology*, 90 (2), 177-202.

Miner, A. G. and Glomb, T. M. (2010). "State mood, task performance, and behavior at work: A within-persons approach". *Organizational Behavior and Human Decision Processes*, 112, 43 - 57.

Norusis, M. J. (2001). "*SPSS 12.0, Statistical Procedures Companion".* s.l.: Prentice Hall.

O'Donoghue A., Conway E. and Bosak J. (2016). "Abusive supervision, employee well-being and ill-being: the moderating role of core self-evaluations". Emotions and Organizational Governance. *Research on Emotion in Organizations*, 12 (1), 3 -34.

Peterson, U., Demerouti, E., Bergstrom, G., A sberg, M. and Nygren, A. (2008). "Work characteristics and sickness absence in burnout and nonburnout groups: A study of Swedish health care workers". *International Journal of Stress Management*, 15, 153 - 172.

Quartey, S. H. and Bill, B. P. (2012). "Employee Health and Safety Practices: An Exploratory and Comparative Study of the Shipping and Manufacturing Industries in Ghana". *International Journal of Business and Management.* 7 (23), 81 – 95.

Quick, J. and Henderson, D. (2016). "Occupational stress: Preventing suffering, enhancing wellbeing". *International Journal of Environmental Research and Public Health*, 13 (5), 459-469.

Richman, J. A., Rospenda, K. M., Flaherty, J. A., and Freels, S. (2001). "Workplace harassment, active coping, and alcohol-related outcomes". *Journal of Substance Abuse,* 13(3), 347–366.

Russell, J. A. (2003). "Core affect and the psychological construction of emotion". *Psychological Review,* 110 (1), 145-172.

Salanova, M., Agut, S. and Peiro, J. M. (2005). "Linking organizational resources and work engagement to follower performance and customer loyalty: The mediation of service climate". *Journal of Applied Psychology*, 90, 1217 - 1227.

Schaufeli, W. B., Shimazu, A., and Taris, T. W. (2009). "Being driven to work excessively hard:The evaluation of a two-factor measure of workaholism in the Netherlands and Japan". *Cross-Cultural Research*, 43 (1), 320 - 348.

Sydney-Agbor N., Ebeh R. E., Nwankwo B. E. and Agu S. A. (2014). "Influence of Emotional Intelligence and Gender on Job Satisfaction among Local Government Employees". *Research in Psychology and Behavioral Sciences*,2 (4), 86-89.

World Health Organization (2001). "The world health report 2001 - Mental Health: New Understanding, New Hope". A product of NMH Communications. Geneva. www.who.int/whr/2003/en/whr03_en.pdf

World Health Organization- WHO (2005). "Mental health policies and programmes in the workplace (mental health policy and service guidance package), WHO, Geneva. whqlibdoc.who.int/publications/2005/9241546794eng.pd. (accessed on 12/12/2018).

Xanthopoulou, D., Bakker, A. B. and Fischbach, A. (2013). "Work engagement among followers facing emotional demands: The role of personal resources". *Journal of Personnel Psychology,* 12 (2), 74-84.