Stress at work: any potential redirection from an African sample?

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ABSTRACT

Research on workplace stress has generated a massive interest and following in the management and behavioural literature in the Western world, but not much data has come out of Africa. This study explored the relationship among Perceived stress, Perception of sources of stress, Satisfaction, Core self-evaluation, Perceived health and Well being. Survey data was collected from 355 employees in Botswana. Result from descriptive data and correlational analysis indicates significant links between Perceived stress, Satisfaction, Core self-evaluation and Well being. Overall, much of our findings are consistent with what has been reported in the literature. Managerial implications of the findings were discussed.

INTRODUCTION

The amount of research attracted by the field of occupational stress is perhaps substantial enough to discourage the initiation of new research activity in the area, yet not so much of this cumulative body of knowledge has emerged from Africa. It is interesting that research activity in the field of stress has continued to grow (Jones & Bright, 2001, Johnson et al., 2005). However, the concept continues to lack specificity which might make it attractive to researchers, as diverse definitions and approaches can be adopted and a wide range of potential stressors, strains and intervening variables operationalised under various heading related to the concept (Kinman & Jones, 2005). On the flip side however, this lack of concept clarity that continues to surround the meaning of stress, has raised other questions on the continued usefulness of the concept (Briner, Harris & Daniels, 2004).

The Perceived Stress Scale (PSS) adopted for this study is a measure of the degree to which situations in one's life are appraised as stressful (Cohen et al. 1983; Cohen and Williamson 1988). The items were designed to tap how unpredictable, uncontrollable and overloaded respondents find their lives (Cohen & Williamson 1988). The PSS was designed for use in community samples with at least junior high school education, a criterion which our study sample meets. The scale was argued as providing a conceptually clearer (better) measure of appraised stress (Cohen 1986).

According to Judge, Locke, Durham, and Kluger (1998), subjective appraisals are influenced by "the deepest (e.g., metaphysical) assumptions people hold about themselves, other people, and the world" (p. 18). These fundamental beliefs, or core self-evaluations, influence personal appraisals of external events and are particularly suited for occupational stress research (Best, Stapleton & Downey, 2005). Core self-evaluation is a broad, latent, higher-order trait indicated by four well-established traits in the personality literature: self-esteem, generalized self-efficacy, neuroticism, and locus of control. The commonality of these traits is that core self-evaluation is a basic, fundamental appraisal of one's worthiness, effectiveness, and capability as a person (Judge et al. 1997). The importance of these four core self-evaluation traits has been well reference in the literature (Judge et al. 2003). In several studies, (Erez & Judge 2001; Judge et al. 2000; 1998a & 1998b) the four core traits have not only been shown to load on a single factor, they also share conceptual similarity (Judge & Bono 2001) all buttressing the argument that they are all indicators of a common core (Judge et al. 2003). The validity of the core self-evaluations construct is revealed in its positive association with job and life satisfaction as well as work performance (Judge, et al., 1998b). In several studies, core self-evaluations have been linked with job satisfaction and job characteristics (Judge et al. 1998b; Judge et al. 2000; Judge & Bono 2001); job performance (Judge & Bono 2001); motivation and performance (Erez & Judge 2001). However, in many of these studies core self-evaluation has been measured indirectly; and Judge et al. (2003) noted this is a serious limitation. In the present study we measure the concept directly using the 12-item CSES (Judge et al. 2003).

In the present study we focus attention on occupational stress measured by two popular measures (perception of stress and perception of the sources of stress) and it relationship with satisfaction, core self-evaluations, perceived health and well being among employees in Botswana. We did not find any prior African studies that had undertaken similar effort using these variables. We therefore propose to test the following specific hypotheses about the relationships.

Proposed Hypotheses:
1. There are no significant gender differences in all the study variables
2. There is no relationship between perception of stress and perception of the sources of stress
3. There is no relationship between perception of stress on one hand and each of satisfaction, perceived health, well being and core self-evaluations
4. There is no relationship between perception of the sources of stress on one hand and each of satisfaction, perceived health, well being and core self-evaluations

METHODOLOGY

Sample and Respondent Characteristics

Survey data was collected from a sample of public and private sector employees in Gaborone, Botswana. All participating organisations were visited (18 organisations in all participated) and the human resources department, through a designated officer, served as the collection point for returned questionnaires in sealed envelopes. This method of self-selecting and volunteering organisation has proved to be an effective way of obtaining participation in Botswana (Gbadamosi, 2006). A total of 430 questionnaires were returned with 355 being usable of the 700 questionnaires administered, representing an effective response rate of 50.7 percent. Botswana is a relatively small country with a population of about 1.785 million people; total adult literacy of 77%, and GNP per capita $3430.00 (UNICEF 2003 – Statistics). About 54 percent of respondents were females and only 35 percent were married. Also about 35 percent falls within the age bracket of 21-30 years and 48 percent were between 31-40 years. Over 65 percent have worked for over 6 years. Most of the respondents were well educated with about 56 percent possessing a basic university degree or higher. Over 68 percent were in the fairly high income bracket equivalent of over 500 US dollars monthly at the time of data collection.

The Procedure and Measures

The research instrument was a structured questionnaire measuring a total of 6 variables. The variables measured were Perceived Stress, Perception of sources of stress, Satisfaction, Perceived health, Well being, and Core self-evaluations. The reliability coefficient alpha reported for all the measures were within acceptable region (reported in Table 3).

1. *Perceived stress:* was measured with the popular 10-item scale of Cohen et al. (1983) and Cohen & Williamson (1988). Examples of item include: (1) In the last month, how often have you been upset because of something that happened unexpectedly? (2) In the last month, how often have you felt nervous and "stressed"? (3) In the last month, how often have you been able to control irritations in your life? This was anchored on a 5-point scale from 'Never' to 'Very Often'. High scores on this scale indicate high perceived stress.

2. *Perception of Sources of Stress:* was measured by a 20-item scale of Sutherland & Cooper (1995). The items were measured on a 4-point scale from "Strong", "Moderate", "Sometimes" and "Never" a source of stress. Examples of items include: (1) Time pressure and deadline, (2) Work overload (3) My spouse's attitude towards my career (4) Threat of job loss. The higher the score on this scale therefore the fewer the sources of stress perceived.

3. *Core Self-Evaluations*: was measured with the 12-item scale of Judge et al. (2003). Responses were anchored on a five-point scale from 'Strongly Disagree' to 'Strongly Agree'. Six of the items were reverse scored and Judge et al. (2003) reported reliability coefficients from 0.81 to 0.87. The higher the score the higher the core self-evaluations.

4. *Perceived Health:* measured by a 2-item measure. "Do you consider that your (1) physical health and (2) state of emotional wellbeing are – very poor, poor, average, good and very good?" Higher scores indicate better health perception by respondents.

5. *Well Being:* also measured by a 2-item scale. "Given your current lifestyle, to what extent do you (1) feel at risk from heart disease (e.g. from high blood pressure) (2) feel at risk from job burnout (e.g. physical and emotional exhaustion)?" This was anchored a 5-point scale from 'high risk' to 'low risk'. Lower scores on this scale means higher well being.
6. *Satisfaction: was* measured with 5-item measure. Examples of the items include: (1) Are you satisfied with your job for the time being? (2) Do you have to force yourself to go to work? (3) Do you often think about quitting your job and finding yourself another job? All the responses were anchored on a Yes/No response. All five items were added for analysis, with the negatively worded items reversed scored. Hence the higher the score on the scale the higher the satisfaction of the respondent.
7. *Demographic Characteristics*: The demographic profiles included in the study are gender, marital status, age, work experience, education, type of organisation and total income. Table 1 shows summary of the respondents characteristics.

Table 1: Summary of Sample Characteristics

	Frequency	%		Frequency	%
Gender			*Marital Status*		
Male	162	45.6	Single	196	55.2
Female	191	53.8	Married	124	34.9
Missing	2	0.6	Widowed	3	.8
Age			Separated	6	1.7
Under 20	1	0.3	Divorced	9	2.5
21-30	126	35.5	Living with partner	16	4.5
31-40	170	47.9	Missing	1	0.3
41-50	47	13.2			
51-60	10	2.8	*Education*		
Over 60	1	0.3	Junior Certificate	22	6.2
Work Experience			High School/Form 5	32	9.0
Under 1 year	18	5.1	College Certificate/Diploma	103	29.0
1-5	107	30.1	Undergraduate Degree	75	21.1
6-10	87	24.5	Graduate Degree	105	29.6
11-15	79	22.3	Others	18	5.1
16-20	33	9.3			
Over 20	31	8.7	*Total Income (Monthly)*		
Type of Organisation			Less than P2000	19	5.4
Government/Public/Civil Service	156	43.9	P2001-P5000	94	26.5
Public Parastatals	96	27.0	P5001-P8000	111	31.3
Tertiary Teaching	24	6.8	P8001-P12000	80	22.5
School Teaching	21	5.9	P12001-P15000	21	5.9
Private Sector	42	11.8	Over P15000	28	7.9
Others	15	4.2	Missing	2	0.6
Missing	1	0.3			

Note: (N = 355); P = Pula; 1 Pound Sterling was about 6 US Dollars

ANALYSIS AND RESULTS
In our analysis descriptive statistics was used to explore some of the variables. On satisfaction, we found about 52% of the respondent were not satisfied with their job; 87% noted there were conditions about their jobs which could be improved; 73% were not satisfied that their efforts are commensurate with their rewards but only 36% claimed they have to force themselves to go to work. On perceived health, 48.5% of the respondents reported their physical health as good with another 20% claiming it is very good. Similarly emotional well-being was reported as very good (43.1%) albeit about 33% claimed it is average. On well being, respondents' indicated risk for heart diseases like blood pressure

was average (35%) while another 27% puts it as a low risk. Similarly, the risk of job burnout from physical and emotional exhaustion was reported to be average (33%) with the other four options ranging from 14% to 18% - a very even spread.

The questions relating to health problems were mostly unanswered with the missing items in the five identified health problems ranging from 27 (7.6%) to 34 (9.6%). Specifically, when asked if they suffer from ailments the "No" responses for gastric problems (82.5%), chest pain (83.1%), hypertension (84.2%), Insomnia (82.3%), and migraine (85.9%). On the perception of sources of stress, the following items stood out as strong sources of stress in the sample: lack of career development (38.6%), incompetent boss (38.2%), work overload (38.4%), and time pressure and deadline (35.6%). At the other end of the continuum the following were never sources of stress: the amount of travel required by my work (48.4%), taking my work home (42.3%), keeping up with new technology (41.7%), my spouse's attitude towards my career (58.3%), dealing with environmental groups (48%) and threat of job loss (47.7%).

We investigated if there were any significant gender differences in all the study variables and the result is reported in Table 2.

Table 2: Means, Standard Deviation and t-test of Study Variables (Gender)

S/N	Study Variables	Gender (Mean)		Levene's Test for Equality of Variances		t-test for Equality of Means		
		Male	Female	F	Sig.	t	df	Sig. (2-tailed)
1	Satisfaction	7.93	8.29	.151	.698	-2.329	351	**.020**
2	Perceived Health	7.54	7.21	3.565	.060	1.986	351	**.048**
3	Well Being	5.71	5.27	2.151	.143	1.877	351	.061
4	Perceived Stress	3.14	3.23	1.798	.181	-1.887	351	.060
5	Perception of Sources of Stress	2.69	2.71	.051	.822	-.252	298	.801
6	Core Self-evaluation	3.29	3.31	4.642	**.032**	-.248	322	.804
7	Age	2.75	2.90	.888	.347	-1.713	351	.088
8	Marital Status	1.73	1.75	.147	.701	-.147	351	.884
9	Work Experience	3.12	3.37	2.248	.135	-1.751	351	.081
10	Type of Organisation	2.25	2.25	1.201	.274	-.017	350	.986
11	Level of Education	3.86	3.66	4.281	**.039**	1.522	350	.129
12	Total Income	3.49	2.99	6.157	**.014**	3.692	324	**.000**

Notes: N = 355, Male = 162, Female = 191

As the table shows, Levene's test for equality of variance shows significant variance differences between male and female only for core self-evaluation (p < 0.32), level of education (p < 0.039) and total income (p < 0.014). However, the independent t-test revealed satisfaction (p < 0.020), perceived health (p < 0.048) and total income (p < 0.000) to be significantly different between men and women. Differences in total income was strongest with males (mean = 3.49, SD = 1.314, SE = 0.104) earning significantly more than the females (mean = 2.99, SD = 1.180, SE = 0.086). Male income on the average is between P5001-P8000 while female income on the average is about P5001. The correlation matrix also verified this significant relationship between gender and total income, r = -0.196, p < 0.01 (see table 3). We can conclude from this finding that females are more satisfied with their jobs, the males perceived themselves healthier and they also earn significantly more than females. There are no other gender differences among the study variables and this partly confirms our null hypothesis 1.

Table 3: Means, Standard Deviations, Coefficient Alpha and Intercorrelations among Study Variables

Study Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	Mean	SD
1 Perceived Stress	(0.67)	-.056	.219**	-.341**	.090	-.196**	.100	.014	.001	.102	.076	-.055	-.110*	8.14	1.46
2 Perception of Sources of Stress		(0.86)	-.147*	.065	-.273**	.139*	.015	.010	-.156**	.027	.086	-.096	-.155**	7.36	1.61
3 Satisfaction			(0.65)	-.230**	.186**	-.224**	.123*	.000	-.053	.017	-.039	-.107*	-.172**	5.46	2.20
4 Perceived Health				(0.70)	-.262**	.364**	-.105*	-.103	.057	-.132*	.011	.164**	.167**	3.19	.47
5 Well Being					(0.71)	-.181**	-.100	.162**	.130*	.119*	-.124*	.065	.185**	2.71	.57
6 Core Self-evaluation						(0.70)	.013	-.041	.129*	-.047	.047	.274**	.250**	3.30	.50
7 Gender							-	.091	.008	.093	.001	-.080	-.196**	.54	.49
8 Age								-	.226**	.810**	-.026	-.028	.301**	2.84	.78
9 Marital Status									-	.194**	.084	.076	.210**	1.75	1.23
10 Work Experience										-	.017	-.130*	.266**	3.27	1.35
11 Type of Organisation											-	.008	.050	2.27	1.56
12 Level of Education												-	.559**	3.74	1.28
13 Total Income													-	3.21	1.27

Notes: (2-tailed); * $p < 0.05$; ** $p < 0.01$; n = 391 Alpha reliability coefficients are reported in bold and parenthesis where applicable.

The intercorrelation matrix among all the study variables is reported in Table 3. Our results indicated an insignificant inverse relationship between perceived stress and perception of sources of stress also confirming our null hypothesis 2. We also found significant positive correlations between perceived stress and satisfaction, while perceived stress showed significant inverse correlation with perceived health and core self-evaluations. The relationship of perceived stress with well being was weak and insignificant. We thus reject our null hypothesis 3. For our third hypothesis, we found a significant inverse correlation between perception of sources of stress on the one hand and each of satisfaction and well being on the other. Perception of sources of stress was however significantly positively correlated with core self-evaluations. Again we reject our null hypothesis 4.

DISCUSSION, MANAGERIAL IMPLICATIONS AND CONCLUSION

The purpose of this study was to investigate stress at work and some of its correlates using an African data. We anticipate that given the relatively low level of empirical data on this concept from Africa we might be able to bring to the fore some tentative comparative data to the massive empirical data already in Western literature and thus inspire a process of continued investigation in this all important behavioural concept.

Our results suggest that while perceived stress is inversely related with core self-evaluations perception of sources of stress is directly related with it. Given the inverse albeit insignificant relationship between perceived stress and perception of sources of stress this is not a surprise. High scores in our perception of sources of stress measure indicate the individual perceives many of the items on the scale as never being a source of stress. This implies that the fewer the sources of stress indicated (perception of sources of stress) the higher the perception of stress, even though this inverse relationship is not statistically significant. This finding needs to be interpreted with caution as we did not find precedent in the literature. We found a direct relationship between perceived stress and satisfaction; whereas we found an inverse relationship between perception of sources of stress and satisfaction. This result is consistent with the literature which had reported that employees' core self-evaluations may operate directly on both job satisfaction (Best el al. 2005; Judge et al. 2003; Judge et al. 2000, Judge, et al., 1998b) and burnout (Best et al. 2005). Best et al. (2005) measured burnout with only items assessing emotional exhaustion and depersonalization dimensions.

We also found direct significant relationship between perception of sources of stress and core self-evaluations which is consistent with the nature of reported positive self esteem which core self-evaluations represent (Judge et al., 2003). Respondents with higher core self-evaluations scores reported fewer sources of stress. This is again consistent with Best et al. (2005). Interestingly we also found that with fewer sources of stress expressed (perception of sources of stress) significantly lower satisfaction but higher well being was also reported. Our result further reveals direct significant relationship between the two variables (satisfaction and well being). Overall, much of our finding is consistent with the literature. Much as this confirms what we already know, it is valuable given that not much data has been generated from African samples in this area of behavioural research.

There are a number of managerial implications for our foregoing discussions. First, the finding that perception of stress, satisfaction, core self-evaluation and well being are linked was expected and supports existing research in the area as reported earlier. It is therefore not surprising that many of the occupations that are reporting high stress levels are also reporting low levels of job satisfaction (Johnson et al., 2005). Secondly, the fairly low levels of job satisfaction reported calls for managerial attention although augmented by the relatively high levels of perceived health, but again a generally average level of reported well being.

There are however a number of limitations of the study. First, correlation analysis is limiting in terms of its interpretation and does not tell us much about the nature of the data as well as establish causal relationship particularly in this area of research where the conceptual and empirical literature is massive (at least in the West). We hope to explore the data further in subsequent development of the paper. Secondly, the relationship of the variables with demographic data was also unexplored in this report due to space constraints which again we intend to develop further. Finally, the study is limited

by the self reporting nature of its data which may weaken the validity. However, like most studies using self-report measures we cannot be certain that all responses have been entirely sincere.

Conclusively, the paper provides empirical information on the state of perceived stress at work along with some related variables – satisfaction, core self-evaluations, perceived health and well being – in an African sample (Botswana). Although some explanations of the findings has been made, a more detailed interrogation of the data would be required to put the findings closer to what we already know in reported Western literature. It is, however, hoped that this process already initiated would provoke more attention to behavioural research issues in future IAABD conferences in addition to the near over concentration of research efforts on finance, economic development and marketing related issues for which the IAABD conference has generated much more enviable research interest (Gbadamosi & Iyanda, 2006).

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