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Leisure-time physical activity and some psychological parameters among some executive employees in selected African countries

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Abstract

Participation in leisure-time physical activity (LTPA) is vital to ensure adequate physical work capacity for the demands of daily living and job performance. Due to work demand, most top and middle level (executive) managerial employees become physically inactive and experience psychological and other health problems which may lead to hypokinetic diseases and even premature death. The purpose of this study was twofold: to determine leisure-time physical activity and psychological well-being of executive employees; and to determine the relationship between leisure-time physical activity and psychological well-being of executive employees in selected African countries. A cross-sectional study design was carried out on a group of 156 (mean age; 41.22±10.17 years) available executive employees from selected African countries. Participants were grouped according to ages (≤35 years; 36–46 years and ≥ 45 years). Standardized questionnaires were used to collect the data. Subsequently, total scores were calculated for all variables. Out of 156 participants in the study, 42.9% occupied top level management and 57.1% middle level management positions. Age groups analysis indicated that, 31% and 68.6% in the less than 35 years age group were in the top and the middle levels management positions respectively. In the age group 36 to 46 years, 47% occupied the top level management position and 52.8% occupied the middle level management position. With regard to LTPA, top level managers (71.6%) scored low LTPA compared to the middle level managers (62.9%). In addition, both the top and middle level managers reported bad emotional (49.3%; 56.2%) and happiness indexes (41.8%; 37.1%) respectively. Though not significant, LTPA was positively associated with psychological well-being parameters amongst top level managers. The study concluded that both top and middle levels managers exhibited low LTPA, and with no participation in high physical activity among top level managers. In addition, more middle level managers reported bad emotional stage than the top level managers, while the top level managers were less happy than the middle level managers. It is recommended that urgent strategic intervention programmes for leisure-time physical activity and psychological wellness are needed to promote physical health and well-being of the executive employees.

Keywords: Leisure-time physical activity, stress, burnout, happiness, executive employees.

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Introduction

Studies have revealed that regular leisure-time physical activity plays an important role in the promotion of physical health and well-being of an individual (Kush, Fee, Folsom, Mink, Anderson & Sellers, 1999), and also lowers the health risk profiles associated with sedentary behaviours (Physical Activity Guidelines Advisory Committee, 2008). In addition, regular leisure-time physical activity has also being reported to have positive effect on the prevention and rehabilitation of illness such as heart disease, hypertension, osteoporosis, cancer and diabetes (Draheim, Williams & Mccubbin, 2002), and mental health (Paluska & Schwenk 2000; Lawlor & Hopker, 2001; Koningsveld, Zwinkels, Mossik Thie & Abspoel, 2003).

Work-related stress is reported to be the second common work-related health problem, after back pain, affecting 28% of workers across all type of employment sectors in European Union countries (Factsheet, 2002). Job strain is defined as the combination of high psychological job demands and low decision latitude on the basis of the demand-control model (Karasek, 1979). Some studies have reported that high job demands (Johansson, Johnson & Hall, 1991; Payne, Jones & Harris, 2005) or low job control (Johansson et al., 1991) are associated with low or non-existent leisure-time physical activity (LTPA). It is reported that people who exercise less do have high probability of being depressed (Ross & Hayes, 1988; Kaplan, Lazarus, Cohen & Leu, 1991; Weyerer, 1992; Rajala, Uusimaki, Keinanen-Kiukaanniemi & Kivela, 1994). Due to work demand most top and middle (executive) managerial employees turn to be physically inactive (Martinez-Gonzalez et al., 2001; Haskell et al., 2007). The decline in physical activity varies significantly as some individuals maintain their physical activity level, while others are faced with limitations due to factors like workload, age, and health problems (Lahtil, Laaksonen, Lahel & Rahkonen, 2010). Regular leisure-time physical activity (LTPA) has been found to promote physical health and well-being of an individual (Blair, 1994; Kush et al., 1999; Rahl, 2010), and also lowers the risk profile and mortality rate (US Department of Health and Human Services, 1996; Glenister, 1996). In addition, regular physical activity has also been reported to have positive effect on the prevention and rehabilitation of illness such as heart disease, hypertension, osteoporosis, cancer and diabetes (Ehrman, Gordon, Visich & Keteyian, 2009). It has been revealed that employees who participate in physical activity, are assets to their companies which benefit a lot in aspects such as greater productivity, reduced chronic stress responses (e.g., absenteeism, turnover) and greater job satisfaction (Opatz, 1994; Innstrand, Espnes & Mykletun, 2004; Kouvonen, Kivimaki, Elovainio, Virtanen, Linna & Vahtera, 2005; Tian & Wang, 2005; Van Rhenen, Blonk, Van der Klink, Van Dijk & Schaufeli, 2005).

LTPA plays a significant role in the management of chronic stress through the control of neuro-endocrine, autonomic, and behaviour responses to physical and psycho-social stress. Stress activates the hypothalamic-pituitary-adrenocotical (HPA) axis, which leads to the release of glucocorticoids into the general vasculature (Marquez, Nadal & Armario, 2002; Grissom, Kerr & Bhatnagar, 2007; Sharkey & Gaskill, 2007). As such, physically active people are found to have reduced reactivity to physical stressors as well as reduced susceptibility to the adverse influence of life stress (Tucker, Cole & Friedman, 1986*).* Participation in regular physical activity is therefore, associated with the lower reactivity of HPA to psychological stress (Sharkey & Gaskill, 2007). In a highly competitive nature of the corporate environment, organisations are becoming increasingly aware of the effect of stress on employee's health and productivity (Rothmann, Steyn & Mostert, 2004). Moreover, the South African Heart Association (2005) indicated that the increase of job strain may lead to a situation where the stress level of employees may reach uncontrollable limits, leading to negative effects on personnel and company level. In another finding in South Africa, it was stated that the emotional well-being of employees is also a matter of concern (Grace, Wilders & Strydom, 2009). In this regard, various studies indicated that regular participation in physical activity can be an effective strategy in coping with high stress levels (Aldana, Sutton, Jacobson & Quirk, 1996; Sharkey & Gaskill, 2007), and also facilitates the recovery process (Rudolph & McAuley, 1995).

It has been being theorized that those who had high job discretion engaged more frequently in sports activities during their leisure time, than those who had a low job discretion who engaged themselves more frequently in sedentary activities at home (for example TV watching) during their leisure time (Choi, Schnall, Yang, Dobson, Landsbergis, Israel, Karasek & Baker, 2010). In addition, those who had "low strain" jobs (a combination of low control and high demands) would have intermediate levels of the leisure activities or sports activities during leisure time (Choi et al., 2010).

There is limited information available on the effect of leisure-time physical activity on stress, emotional well-being, happiness and quality of life in African countries like Kenya, Botswana and Nigeria, more especially on top and middle managerial employees. The studies which could be found in Western countries that examined the impact of physical activity on physical health functioning among middle-aged employees were the one by Lahtil et al. (2010) and Wiljndaele Matton Duvigneaud, Lefevre, De Bourdeaudhuij, Duquet, Thomis and Philippaerts (2007). In a study by Wiljndaele et al. (2007) exercise was associated with high level of well-being in various facets of employees. In a study carried out in South Africa on employee wellness, indicated that a high number of employees are experiencing physical and psychological emotional health problems (Grace et al., 2009). However, there is still paucity in studies

that investigated the effect of leisure-time physical activity on stress, emotional well-being, happiness and quality of life in executive employees of African countries on a wider scale. It has been suggested that planned health promotion aimed at behavioural change should be based on empirical knowledge about present behaviour, behavioural determinants and mechanisms of behaviour change (Green & Kreuter, 1991). Therefore, the leisure-time physical activity (LTPA) and selected psychological parameters in executive employees of some African countries need to be investigated. The purposes of this study therefore, were to determine leisure-time physical activity and psychological well-being, and to determine the relationship between leisure-time physical activity and psychological well-being of executive employees of selected African countries.

Methodology

Study design

This was a cross-sectional study design on an available sample from selected African countries. This study used the protocol of the South African National Games and Leisure Activities (SANGALA) (Dreyer & Strydom, 1994) which was initiated by the National Government, Department of Sport and Recreation of South Africa in 1995. The initiative was supported by the Heart Foundation of South Africa, International Institute for Health Promotion and the Africa Association for Health, Physical Education, Recreation, Sport and Dance (AFAHPER-SD). After the SANGALA study was completed in South Africa, it was expanded to involve more African countries in 2002 to 2006.

Participants

A total number of 156 participants were purposively recruited from the available population to participate in the study. The participants comprised the middle and top level employees with age ranging from 35 years and above (mean age: 41.2±10.1 years). Participants were recruited from the following African countries namely: Botswana, Kenya and Nigeria. Nigeria is located on the Western part of Africa while Botswana represents Central Africa sub-region and Kenya, the East Africa Sub-region. Nigeria further represents the most populous Black Country in Africa; Botswana represents an emerging democracy and economy while Kenya represents a success story in sport. These features are bound to influence the lifestyles of the citizens of these countries.

Measuring instruments

The *physical activity questionnaire of Sharkey* (1997) was used to determine the leisure-time physical activity index (LTPAI) of the participants. The training principles namely frequency, duration and intensity were reported by each respondent retrospectively and these were used to determine the LTPAI. Respondents were then classified into low active (LTPAI ≤ 16), moderate active (LTPAI 17- 44) and high active group (LTPAI ≥45) (Swanepoel, 2001).

The *stress symptoms questionnaire* of Burns (1988) was used to determine the stress index of the participants. This questionnaire consists of 25 questions describing various stress symptoms namely, *"I have indigestion", "I sleep badly", "I have a headache"*. The participants indicated the prevalence of the symptoms in their life by selecting answers ranging from 2 = often, 1 = A few times a month and 0 = Rarely. The weighing of the various symptoms was then added to form the stress index. For the purpose of profiling in this study participants were classified into three categories indicating; good (0 – 14), moderate (15 – 25), and bad index (≥ 26) (SANGALA, 2000).

The *emotional well-being index (burnout) questionnaire* of Pines, Aronson and Kafry (1981) was used to determine the emotional well-being index (EWBI). This questionnaire consists of 21 questions from which four (4) reflect a positive approach (A), and the rest (17) a negative approach (B). Symptoms of the negative approaches are *"feeling depressed"*, *"being emotional exhausted"*, while positive feelings are described typically by the following: *"being happy"*, *"feeling optimistic"*. The participants were asked to describe the prevalence of the symptoms in their lives as: 1 =Never, 2 = once, 3 = Rarely, 4 = Sometimes, 5 = Often, 6 = Usually, 7 = Always. The totals of positive (A) and negative (B) responses were added and the index was calculated by using the equation: 32-B=C+A=D/21=EWBI. For the purpose of profiling in this study participants were classified into three categories indicating, good (1.0 – 3.0), moderate (3.1 – 4.0), bad (4.1 – 5.0) (SANGALA, 2000).

The *happiness well-being and quality of life* was determined by using the questionnaire of Kamman and Flett (1983). This questionnaire also called Affectometer two (2), is a scale which indicates the current level of general happiness. It consist of 20 questions, some indicating a positive outlook while others are associated with a negative mood, namely *"my life is on the right track" vs "I feel like a failure"*. The respondents were asked to evaluate the prevalence of these moods in their life on an affectometer scale resembling the following categories, 1= Never, 2= Occasionally, 3 = Sometimes, 4 = Often, 5 = All the time. All the positive and negative responses were added and the index was calculated by the following equation (sum of positive values - sum of

negative value=index). For the purpose of profiling in this study participants were classified into three categories indicating, good (25 – 40), moderate (17 – 24), bad (0 – 16) (SANGALA, 2000).

Procedure

The African Association for Health, Physical Education, Recreation, Sport and Dance (AFAHPER-SD) regional structure was used to distribute the questionnaires in each of the selected countries. After negotiating with the President of AAHPERD-SD, contact persons were identified in the selected countries and the questionnaires were posted to them. Follow-up letters were sent to the contacts in order to motivate them for the purpose of data collection. They received detailed instructions on administration and data handling.

Statistical analysis

The SPSS version 21.0 (SPSS, inc., Chicago) was used for data analysis. Descriptive statistics (i.e. frequencies, percentages) were applied to the data to determine the leisure-time physical activity and psychological profile of the participants for both top level managers and middle level managers. Correlations coefficients (*r*) were calculated from continuous variables to determine the relationship between the participants' leisure-time physical activity- (LTPA) and some psychological parameters among some executive employees. Statistical significant levels were set at $p \leq 0.05$.

Results

Out of 156 participants in the study, 42.9% occupied top level management positions and 57.1% occupied middle level management positions. When data were analyzed according to age groups, 31% and 68.6% in the less than 35 years age group were in the top and the middle level management positions, respectively. In the age group 36 to 46 years, 47% occupied the top level management positions while 52.8% occupied the middle level management positions. For the age group older than 46 years, the percentage was 50% each for both top and middle level management positions.

Table 1 presents LTPA profile of top and middle level executive management levels by age categories. Eighteen (71.6%) top level managers and 56 (62.9%) middle level managers reported low activity level (LTPA $\leq$ 16). Seventeen (25.4%) top level managers and 24 (27.0%) middle level managers were found to be moderately active (LTPA 17-44) while two (3.0%) and nine (10.1%) top level and middle level managers respectively were classified as highly active (LTPA $\geq$45).

Table 1: Leisure-time physical activity profile of the top and middle level management employees in selected African countries

	Top level Managers		Middle level Managers	
	n	%	n	%
Low active (LTPA ≤ 16)	48	71.6	56	62.9
Moderately active (LTPA between 17-44)	17	25.4	24	27.0
Highly active (LTPA ≥45)	2	3.0	9	10.1
Total	67	100.0	89	100.0

Table 2 shows the results of the LTPA of the executive employees by age groups. Fourteen (87.5%) top, twenty four (68.6%) less than 35 years old; seventeen (68.0%) top, fifteen (53.6%) middle level managers age group 36-45 years old and seventeen (65.4%) top and middle level managers age older than 45 years respectively, reported low activity (LTPA ≤16). One (6.3%) top, six (17.1%) less than 35 years old; seven (28.0%) top, eleven (39.3%) middle level managers age group 36-45 years old, and nine (34.6%) top and seven (26.9%) middle level managers age older than 45 years respectively, reported low moderate activity (LTPA 17-44). One (6.3%) top, five (14.3%) less than 35 years old; one (4.0%) top, two (7.1%) middle level managers age group 36-45 years old, and none (0%) top and two (7.79%) middle level managers age older than 45 years respectively, were highly active (LTPA≥45).

Table 2: Leisure–time physical activity index in the top and middle level managers by age groups

Physcial Activity Index	Top level managers						Middle level managers					
	≤35 years		36-45 years		≥46 years		≤35 years		36-45 years		≥46 years	
	n	%	n	%	n	%	n	%	n	%	n	%
Low active (LTPA≤16)	14	87.5	17	68.0	17	65.4	24	68.6	15	53.6	17	65.4
Moderately active (LTPA between 17-44)	1	6.3	7	28.0	9	34.6	6	17.1	11	39.3	7	26.9
Highly active (LTPA≥45)	1	6.3	1	4.0	-	-	5	14.3	2	7.1	2	7.7
Total	16	100	25	100	26	100	35	100	28	100	26	100

Table 3 shows the stress index of the top and middle level managers. Forty eight (71.6%) top level managers and sixty five (73.0%) middle managers reported good stress index. Thirty five (19.4%) top and twenty (24.7%) middle managers reported fair stress index, while eight (9.0%) top and two (2.2.%) middle managers showed bad stress index.

Thirty three (49.3%) top level managers and fifty (56.2%) middle level managers reported bad emotional index. Furthermore, the results show that twenty seven (40.3%) top level managers and twenty six (29.2%) middle level managers reported fair emotional index (Table 4).

Table 3: Stress index profile reported of top and middle level management employees in selected African countries

		Top level managers		Middle level managers	
	Total group	n	%	n	%
Good	113	48	71.6	65	73.0
Fair	35	13	19.4	22	24.7
Bad	8	6	9.0	2	2.2
Total	156	67	100.0	89	100.0

Table 4: Emotional index profile reported by the top and middle level management employees in selected African countries

		Top level managers		Middle level managers	
	Total group	n	%	n	%
Bad	83	33	49.3	50	56.2
Fair	53	27	40.3	26	29.2
Good	20	7	10.4	13	14.6
Total	156	67	100.0	89	100.0

Concerning the happiness index (Table 5), twenty eight (41.8%) top level managers and thirty (37.1%) middle level managers reported poor happiness index. Fair happiness index was reported more among the middle level managers 39.3% (35) than top level managers 25.4% (17), respectively.

Table 5: Happiness index profile reported by the top and middle level management employees in selected African countries

		Top level managers		Middle level managers	
	Total	N	%	n	%
Poor	61	28	41.8	33	37.1
Fair	52	17	25.4	35	39.3
Good	43	22	32.8	21	23.6
Total	156	67	100.0	89	100.0

Table 6 displays the stress index profile of top and middle level managers stratified by age groups. Top level managers in the age groups ≤35 (4) and 36-45 (5) years reported fair stress index in 25.0% and 20.0%, respectively. Fair stress index of 20.0% (7)(≤35 years), 21.4% (6)(36-45 years) and 34.6% (9)(≥46 years), respectively were reported by middle level managers. Bad stress index was reported more (12.5%; ≤35 years and 8.0%; 36-45 years) among top level managers than the middle level managers (Table 6).

The emotional index profile of top and middle level managers according to age groups are presented in Table 7. Top level managers in the age groups of ≤35 years and 36-45 years reported a bad emotional index in 62.5% (10) and 60.0% (15) of the cases, respectively. Bad emotional index was indicated in 65.7% (23), and 42.3% (11), in the participants among middle level managers in the age groups of ≤35 and ≥ 46 years, respectively. Fair emotional index was reported in

31.3% (5) and 32.0% (8) of the individuals in the age groups of <35 and 36-45 years, for top level managers respectively.

Table 6: Stress index profile of top and middle level managers by age groups

	Top level managers						Middle level managers					
	≤35 years		36-45 years		≥46 years		≤35 years		36-45 years		≥46 years	
	n	%	n	%	n	%	N	%	n	%	n	%
Good	10	62.5	18	72.0	20	76.9	27	77.1	21	75.0	17	65.4
Fair	4	25.0	5	20.0	4	15.4	7	20.0	6	21.4	9	34.6
Bad	2	12.5	2	8.0	2	7.7	1	2.9	1	3.6		
Total	16	100	25	100	26	100	35	100	28	100	26	100

Middle level managers in the age categories of ≤35 years and ≥46 years showed a fair emotional index in 28.6% (10) and 38.5% (10) of the cases, respectively (Table 6).

Table 7: Emotional index profile of top and middle level managers by age groups

	Top level managers						Middle level managers					
	≤35 years		36-45 years		≥46 years		≤35 years		36-45 years		≥46 years	
	n	%	n	%	n	%	n	%	n	%	n	%
Bad	10	62.5	15	60.0	8	30.8	23	65.7	16	57.1	11	42.3
Fair	5	31.3	8	32.0	14	53.8	10	28.6	6	21.4	10	38.5
Good	1	6.3	2	8.0	4	15.4	2	5.7	6	21.4	5	19.2
Total	16	100	25	100	26	100.0	35	100	28	100.0	26	100

Fair happiness index was reported in 31.3% (5)(≤35 years), 36.0% (9)(36-45 years) and 11.5% (≥46 years) of the cases among top level managers, respectively (Table 8). Among the middle level managers a fair happiness index was indicated by 31.4% (11)(≤35 years), 46.4% (13)(36-45 years) and in 42.3% (11)(≥46 years), of the participants in the various age groups.

Table 8: Happiness index profile of top and middle level managers by age groups

	Top level managers						Middle level managers					
	≤35 years		36-45 years		≥46 years		≤35 years		36-45 years		≥46 years	
	n	%	n	%	n	%	n	%	n	%	n	%
Poor	8	50.0	9	36.0	11	42.3	15	42.9	10	35.7	8	30.8
Fair	5	31.3	9	36.0	3	11.5	11	31.4	13	46.4	11	42.3
Good	3	18.8	7	28.0	12	46.2	9	25.7	5	17.9	7	26.9
Total	16	100	25	100	26	100	35	100	28	100	26	100

The results show non-significant negative relationships between LTPA and selected psychological variables for the total group (Table 9), and for top and middle level managers. When data was analysed separately for top and middle level managers non-significant positive association was found between selected psychological variables with LTPA in top level managers (Table 10).

Table 9: Correlation coefficients' (*r*) for LTPA and selected psychological variables for the total groups

	LTPA (n=156)	
Psychological variables	*r*	p-value
Stress index	-0.07	0.37
Emotional index	-0.03	0.69
Happiness index	-0.11	0.18

=p≤0.05

Table 10: Correlation coefficients' (*r*) for LTPA and selected psychological variables for the top and middle level managers

	Top level managers		Middle level managers	
	PA		PA	
	r	p-value	*r*	p-value
Stress index	0.01	0.92	-0.12	0.28
Emotional index	0.05	0.67	-0.11	0.30
Happiness index	0.02	0.85	-0.05	0.62

p≤0.05.

Discussion

The results of this study indicated low level of leisure-time physical activity amongst top executive employees (71.6%) and middle employees (62.9%), with few (3%) top level managers and nine (10.1%) middle level managers in the high physical activity category. Furthermore, the results show non-significant positive association between LTPA and psychological components of stress, emotional and happiness indexes amongst the top level managers. This condition can possibly lead to hypokinetic disease which can negatively impact on their performance and productivity (Labuschagne, Strydom & Wilders, 2007). Despite the different methods used to assess LTPA participation, the LTPA level that was found in both groups of employees was in line with the results of the study by Hendriksen, Simons, Garre and Hildebrandt (2010), who reported that a large proportion of employees are not physically active. This was also supported by Bourne, Lambert and Steyn (2002) who found that in the Western Cape Province of South Africa, 30-40% of men and women are inactive or minimally active. According to the Centers for Disease Control (2005), employees who have a low physical activity level are prone to suffer from coronary heart diseases, diabetes, certain cancers, and hypertension amongst other health problems.

The findings of this study also indicate that both top (49.3%) and middle (56.2%) level managers reported bad emotional indexes. This is in line with the study done by Karasek and Theorell (1990) who reported that when an individual is in a work situation characterized by high demands, low control, and low social support, they tend to have bad emotional symptoms. According to Edington and Burton (2003), lack of emotional well-being can cause decrease in productivity, loss of confidence and enthusiasm, and behaviour changes. Worrall and Cooper

(2006) reported that a low level of well-being at work is estimated to cost about 5-10% of Gross National Product (GNP) per annum. Poor health status of employees is linked to higher direct health care cost, lower work output (e.g. presenteeism), higher rates of disability, higher absenteeism and higher work compensation. It is further reported by Glenister (1996) that people who are physically active have a better emotional health than those who are sedentary.

The results of the present study show that top level managers reported poor level of quality of life. Low level of happiness was more prevalent in employees who are less than 35 years of age than in age group of 36-45 years and ≥46 years. These results are also supported by Susniene and Jurkauskas (2009) who found that 33% of employees are unhappy at their work places. Branham (2005) reported that happiness in the workplace leads to higher levels of productivity as well as increase employee's morale, and of which unhappiness is associated with poor productivity in work environment.

The research study by Cooper-Patrick, Ford, Mead, Chang, and Klag (1997) reported no significant association between physical activity and lower clinical depression and psychological distress in midlife. As such, similar findings of non-significant relationships between LTPA and selected psychological variables amongst the studied sample in the present study were observed. Furthermore, a research finding from a large cross-sectional study of Finish public sector employees reported weak association between high job strain and low level of LTPA (Kouvonen et al., 2005)

The major limitation in this study has been that the sample size was small which might be associated with the non-significant association found between LTPA and psychological parameters in the study. Therefore it does not permit generalization of the results in the selected countries. In addition, the cross-sectional nature of the study might one way or the other have affected the non-significant association found between LTPA and psychological parameters the present results and as such a follow-up study is required. Generalisation to the African continent is limited due to the fact that fewer countries were studies.

Conclusion

It can be concluded that both top and middle levels managers exhibited low levels of LTPA. It was also clear that the managers in the older age brackets were less active and experienced more psychological problems than those in the young age group. The top level managers showed low level of physical activity, which may have contributed the tendency to experience more psychological constraints. Thus, it is recommended that strategic intervention programmes geared toward improving health and well-being among the managers in the corporate environment be developed.

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