Physical Activity for Quality Living Among Academic Staff in Nigerian Universities

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Purpose: To determine academic staff perception of the necessity of physical activity for quality living and their involvement in physical activities in Universities in Cross River State, Nigeria.

Method and Materials: Four hundred (400) university lecturers randomly selected, participated in the study. The design was a survey, which utilized researcher – constructed questionnaire for data collection. The reliability coefficient was 0.80. Simple percentages and Pearson's Product Moment Correlation were used for analysis.

Results: Academic staff have high perception that physical activity enhances quality living. Academic staff involvement in physical activity was very low.

Conclusion/Applications: Academic staff have high perception of the necessity of physical activities for quality living although their level of involvement is low. Therefore, individual motivation and official policy are advocated.

Keywords: Physical activity, Academic staff, Quality living.

Introduction

The current technological advancement has obviously affected the lifestyle of people, both in developed and developing countries. Literature has indicated a great reduction in physical activity and locomotion among people due to mechanization and substitution of job performance facilities for the physical effort (Okeneye, 2002; Eshragi, Kashef and Mehri, 2012; Joshua, Samson-Akpan, Eyo and Joshua, 2012). People

have become increasingly inactive, doing exercises only within their limited leisure time. However, one of the preventive approach to non-communicable diseases and means of ensuring quantity and quality of life is through regular participation in appropriate physical activity and sport (Elendu and Akpan, 2012). Despite the overwhelming evidence of the positive effects of exercise, CDC (1999) had reported that more than 60 percent of the adults did not exercise regularly and 25 percent of them were not active at all. Corroborating this O'Brien (2005) still discovered that some adults are afraid that physical exercise would be too strenuous, or that it could be harmful to them.

Physical Activity (PA), in its broadest sense is physical exertion with health benefits and includes gardening, house cleaning, washing of car, playing of balls, walking, jogging, cycling, raking of grasses/leaves, swimming, running, amongst others (Joshua *et al.,* 2012) Physical activity also involves broad range of organized, structured informal forms of exercise, sports, recreation, or hobbies that are not associated with activities as part of one's regular job duties or physical movements (Umeifekwem, 2011). Physical activity in this study implies that it can be done during office time and at home. Quality of life (QoL) is defined as individual's perceptions of their positions in the life context of the culture and value system where they live, and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept, incorporating in a complex way a person's physical health, psychological health, level of independence, social relationships, personal beliefs and relationship to salient features of the environment (World Health Organization, 1996; Elisabete, Morandi, Ivan and Fermanda, 2007). In this study, QoL is the perception and satisfaction by university teachers of their overall health in relation to participation in physical activity.

According to Berman and Snyder (2012), physical activity has some purposes: to restore, maintain or increase the tone and strength of the muscles, to maintain or increase the flexibility of joints; to maintain or promote the growth of bones through the application of physical stressors; and improve the functioning of body systems. Physical exercise has been widely reported as a sure route to physical fitness and a significant contributor to good health status. (O'Brien, 2005; Mayo Clinic Staff, 2004; Adeogun and Dansu, 2006; Bulugbe and Oloyede, 2007; Akeredolu and Adefuye, 2008).

Furthermore, the world is witnessing a significant increase of the global burden of non-communicable diseases such as cardiovascular diseases, cancer and chronic respiratory diseases (World Health Organization, WHO, 2003; Elendu and Akpan, 2012). Globally, the most prevalent non-communicable or chronic diseases include heart disease and stroke, cancer, chronic respiratory disease, and diabetes (WHO, 2005; 2008). These and other chronic diseases are the major causes of

death (60%) and disability worldwide, taking the lives of over 35 million people in 2005, including many young and those in middle age (WHO, 2005). All these diseases are preventable or the risks are reduced through participation in exercises.

Therefore, regular and appropriate physical activity could promote health by reducing the risk of death through reduction in occurrence of heart diseases, reduction of blood pressure, blood cholesterol, risk of colon and breast cancers, as well as reduction in the risk of developing diabetes. Exercise in several ways contributes to human happiness, posture, mood, decreased anxiety, depression and elevated level of self esteem among others (Centre for Disease Control, 1999; Ntui, 2000; U.S. Department of Health and Human Services, 1999; 2002; American Cancer Society, 2007; Pierce, 2008; Nutristrategy, 2004; Berman and Snyder, 2012; Doyle, 2005; Ajala, 2005; Adeogun and Dansu, 2006; Warburton, Nicol and Bredin, 2006; WHO, 2010). Affirmatively, it is reported that individuals who remain physically active or physically fit during middle and older ages live longer than their sedentary counterparts and exercise is recommended for secondary prevention of other diseases (Eyre *et al.,* 2004; Karmisholt and Gotzesche, 2005). Therefore, given the various health benefits of PA, the hazards of being inactive are clear.

Academic members of the universities as the class of learned people, who are in charge of disseminating knowledge and technology, developing skilled forces for the society, directing the national research area and giving a lead in national development, hold a special position and their efficiency is of great importance in the large scale national development which makes their wholistic health indispensable. Their productivity and the environmental factors affecting them and the efficiency of this strategic human resource cannot be left behind without assessment; otherwise, such negligence will bring about great costs because of the amount invested on higher education. Therefore, the community which is supposed to benefit from scientific and technological development and ultimately the sustainable development in educational, cultural economic and political aspect will be at a loss.

Worksites physical activity and fitness programmes provide a mechanism for reaching large numbers of adults (US Department of Health and Human Services, 2010). Employees spend the greater part of their time in their workplaces. Hence, the workplace is a good place for inculcation of health promotion behaviours such as adherence to physical activity. Physically active employees are productive and healthy workforce. According to Shephard (1997), physically active workforce tend to report less illness and recover more quickly from illness, experience less work absence, experience lower staff turn-over, be more productive, have fewer industrial injuries, and report higher levels of job satisfaction. Physically active employees are less likely to suffer from major health

problems, less likely to take sick leave and less likely to have accident at work (Dishman, Oldenburg, O'Neal and Shephard, 1998).

According to Keating, Huang, Guan, Chen, Pinero, Bridges and Deng (2007), worksites, colleges and universities are in need of promoting physical activity among employees. In the University settings, compared to other worksites, most lecturers are inactive and their work is sedentary with minimum demands for physical activity. King, Carl, Birkel and Haskell (1988) reported that about two thirds or 66% of University employees were classified as inactive as far as physical activity (PA) is concerned. Therefore, it is vital to intentionally or consciously perform physical activity to promote sound health and quality of life.

In Nigeria government establishments, including universities, the age and length of service of workforce ranges from 18 to 65 years for academic staff and 18 to 60 years for non-academic staff. Certain physical activities have been recommended to ensure employee's and retired employees' quality of life during and after active service or while working and quantity of life, both while in service or retirement (Elendu and Akpan, 2012). For adults aged 18 to 64 years, the recommended PA, according to WHO (2010) include leisure time PA (for example: walking, dancing, gardening, hiking, swimming); transportation (for example: walking and cycling); occupational (work); household chores, play, games, sports or planned exercise, in the context of daily, family, and community activities. For adults aged 65 years and above, the recommended PA by WHO (2010) is the same except that for retirees occupational PA may be lacking or it may continue if the person is still working. With a well coordinated and supervised workplace physical activity programme, workers can be physically active while in their workplaces, and after work, thereby living a quantitative and a qualitative life (Elendu and Akpan, 2012).

Etuk (2007), Onohwakpor and Eboh (2006), posit that regular physical activity (PA) and sporting are generally lacking among Nigerians. The author further asserts that lecturers in particular do not take part in regular physical activity (PA). A related study in Iranian universities comparing active and inactive academic staff general health using the General Health Questionnaire revealed that women and married academic staff enjoyed better health than their counterpart and contrastingly, 193 of the academic staff were physically active while 51 of them were inactive. Most evidence in contemporary society suggests that the outlay of working and living environment has not reflected the need for regular physical activity. (Humpel, Owen and Leslie, 2002; Orleans, Kraft, Marx and McGinnis, 2003). Some of the challenges identified in literature were lacking, inadequate, and poor implementation of workplace physical activity and sport programme and policies, lack of fitness centres in workplaces,

lukewarm or negative attitude towards physical activity and sport, ignorance of the benefits of physical activity, lack of expert's guidance on the frequency, time, intensity, and type of physical activity among others (Elendu and Akpan, 2012).

There are studies on participation in physical activities in other universities in Nigeria (Onohwakpor and Eboh, 2006; Omolowan and Mohammed, 2006); and outside Nigeria, Eshragai Kashef and Mehri (2012) but studies on perception of the benefits of physical activity and determination of level of participation in physical activity among lecturers in Cross River State are scarce, hence this study. According to Health Belief Model, perception of the benefits of taking a preventive action is an important determinant in the uptake of the preventive action (Rosenstock, 1974).

Apparently, the results of this study will help academic staff and university management to know the level of knowledge and participation in physical activity and if there is a need, a comprehensive intervention will be developed to increase participation in physical activity by the academic staff. This study will also add to the existing database on physical activity. Therefore, the following objectives were developed:

(i) To determine perception of academic staff of the necessity of physical activity for quality living.
(ii) To determine academic staff's involvement in physical activity.
(iii) To determine the relationship between academic staff's perception of the need for physical activity and their involvement in it.

Materials and Methods

The setting of the study was Cross River State of Nigeria. Cross River State is one of the thirty six (36) states of the Federal Republic of Nigeria and it has eighteen (18) Local Government Areas (LGAs). The two universities in Cross River State were the sites of the study (University of Calabar and Cross River State University of Technology (CRUTECH), Calabar Campus).

At the time of the study, University of Calabar had 10 Faculties; 61 Departments, and 812 Lecturers while CRUTECH had 7 Faculties; 23 Departments and 267 Lecturers, which consisted of both males and females who participated in the study. Out of 17 Faculties 15 were selected for the study. Faculty of Education and College of Medical Sciences were not included because of their high knowledge of the benefits of participating in physical activity. 51 departments out of 82 from the two universities were randomly selected. A proportionate sample of 60% from each university was used. Four hundred forty four out of 733 respondents were selected using random sampling. The

lecturers were full-time employees of the two Universities situated in Calabar, Cross River State. The participants' ages ranged between 30 to 60 years. The participants consisted of 276 females and 124 males. With regards to marital status, 40 respondents were single while 360 were married. Two hundred and seven held positions of responsibility such as Deputy Vice Chancellor, Dean, Head of Department, Chairman of Departmental or Faculty Committee, Examination Officer, Registration Officer, Coordinator of Professional Examinations, Director of Institute.

The questionnaire was constructed by the researchers and was validated by measurement experts. It had three (3) sections, Section A, was on socio-demographic characteristics, section B was on perception of physical activity for quality living. The Likert scale format was used with four response categories of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The section C of the questionnaire was on involvement of the academic staff in physical activity and had four response categories also. The responses were very often, Often, Rarely and Never.

The reliability of the instrument was ascertained by administering the copies of the questionnaire to 20 lecturers who were not involved in the study using test retest method of reliability. Pearson's Product Moment Correlation was used to establish the relationship. The results obtained were collated and analyzed with reliability values of .81 and .79 for perception of the benefits of physical activity and involvement in physical activity section of the questionnaire. These reliability results were deemed good enough for the instrument to be used for data collection. The research instrument was administered to the respondents personally by the researchers and trained field assistants. Four hundred copies of completed questionnaire were useable after collection. Prior to the administration of the instrument, an informed consent was obtained from the participants; the purpose of the study was explained to the respondents. Participants were ensured anonymity and confidentiality of the information which was to be used for research purposes. Permission to carry out the research was also obtained from the Ethical Committee of the two Universities. Ninety one percent (91%) return rate was obtained.

Simple percentages were used for analysis to address objectives (a) and (b) and Pearson's Product Moment Correlation was used to address objective (iii) to establish relationship.

Results

The results of data analysis in Table I, show very high percentages in all the items. The result means that academic staff have high perception and understanding that physical activity enhances quality living.

TABLE 1
Percentage Analysis of Academic Staff's Perception of Necessity of Physical Activities for Quality Living

S.No.	Items on Perception	Agree-ment		Disagree-ment	
		F	%	F	%
1.	Physical activity is physical exertion for health benefits	354	89	46	11
2.	Walking briskly at least 2.8 km in 35 minutes per day is an physical activity that improves the quality living	350	88	50	12
3.	Jogging at least three times a week is an example of physical activity that is for healthy living	377	94	23	6
4.	Bicycling is a physical activity for quality living	348	87	52	13
5.	Swimming at least for 20 minutes 3 times a week is a physical activity which keeps one healthy	350	88	50	12
6.	Physical activity prevents high blood pressure and maintain health	353	88	47	12
7.	Physical activity prevents people from being isolated	208	52	192	48
8.	Physical activity prevents depression, thus enhancing quality living	336	84	64	16
9.	Physical activity prevents joint diseases and keeps one healthy	351	88	49	12
10.	Physical activity prevents heart diseases for quality life	336	84	64	16
11.	Physical activity prevents obesity and keeps one in shape	355	89	45	11
12.	Physical activity reduces mental tension (brain, fatigue) for mental well-being	371	93	29	7
13.	Physical activity helps to improve blood circulation for quality living	394	98	6	2

TABLE 2
Percentage Analysis of Academic Staffs' Involvement in Physical Activities for Quality Living

S.No.	Items	Often		Rarely	
		F	%	F	%
1.	Walking briskly at least 2.8km in 35 minutes per day within the campus	183	46	217	54
2.	Jogging at least 3 times per week	98	25	302	75
3.	Bicycling for 30 minutes, 3 times a week	65	16	335	84
4.	Swimming at least for 20 minutes 3 times per week	40	10	360	90
5.	Running 2.5 km in 15 minutes 3 times a week	99	25	301	75
6.	Playing tennis 3 times a week	66	17	334	83
7.	Weight lifting for 45 minutes 3 times every week	53	13	347	87
8.	Washing my floor for at least 40-60 minutes, 3 times per week	197	49	203	51
9.	Playing football for at least 40 minutes at least 3 times a week	83	21	317	79
10.	Dancing for at least 30 minutes 3 times per week	236	59	164	41
11.	Washing of car 30 minutes 3 times a week	224	56	176	44
12.	Raking grasses/leaves for 30 minutes 3 times per week	117	29	283	71
13.	Washing windows and floor of my house 45-60 minutes, 3 times per week	176	44	224	56

The results in Table 2 reveal that all items except items 10 (59%) and 11 (56%) indicate very low involvement of academic staff in physical activities for quality living.

TABLE 3
Correlation Analysis of the Relationship Between Perception of Physical Activity for Quality Living and their Involvement in it

Variable	Mean	SD	Corr
Perception	41.75	6.04	
			.402*
Involvement	27.01	6.94	

*Sig at .05 level (Critical r=.11) N=400; df=398

The result of the analysis in Table 3 shows relationship between Academic Staffs perception of activities and physical involvement in them. That is, the more they perceive physical activities as contributing to quality living, the more they will participate in it.

Discussion

The result of the study indicates that academic staff have high perception of the need for physical activity for quality living. This finding is interesting and significant as it is well established that academic staff are knowledgeable about the usefulness of physical activity in promoting good health. This result is in consonant with Berman and Snyder (2012) assertion that physical activity has some purposes: to restore, maintain or increase the tone and strength of the muscles, to maintain or increase the flexibility of joints; to maintain or promote the growth of bones through the application of physical stressors; and improve the functioning of body systems. Physical exercise has been widely reported as a sure route to physical fitness and a significant contributor to good health status. (O'Brien, 2005; Mayo Clinic Staff, 2004; Adeogun and Dansu, 2006; Bulugbe and Oloyede, 2007; Akeredolu and Adefuye, 2008). Furthermore, it stated that regular and appropriate physical activity could promote health by reducing the risk of death through reduction in occurrence of heart diseases, reduction of blood pressure, blood cholesterol, risk of colon and breast cancers, as well as reduction in the risk of developing diabetes. The exercise in several ways contributes to human happiness, posture, mood, decreased anxiety, depression and elevated level of self esteem among others (Centre for Disease Control, 1999; Ntui, 2000; U.S. Department of Health and Human Services, 1999; 2002; American Cancer Society,

2007; Pierce, 2008; Nutristrategy, 2004; Berman and Snyder, 2012; Doyle, 2005; Ajala, 2005; Adeogun and Dansu, 2006; Warburton, Nicol and Bredin, 2006; WHO, 2010).

Furthermore, with regards to academic staff's involvement or participation in PA, the result generally indicated low levels of participation by the respondents, except on item 10 (59%) which had to do with dancing and item 11 (56%) which was car-washing. These two items were scored slightly above average by the respondents. This finding is interesting because of the sedentary nature of the work done by academic staff, dancing as a means of physical activity is part of the culture of most Nigerians irrespective of the setting and car washing may have to do with the frequent need to keep it clean for outings.

Non-involvement in physical activity by academic staff is supported by king, Carl, Birke and Haskell (1988), WHO reported that two thirds of University employees were classified as inactive. This finding also gives credence to other studies by Etuk (2007) and Keating, *et al.,* 2007. However, a contrasting report from Eshraghi, Kashef and Mehri (2012) revealed that out of 250 Iranian academic staff, 195 were physically active while 51 were physically inactive. It is worthy of note that the world is witnessing a significant increase of the global burden of non-communicable diseases such as cardiovascular diseases, cancer and chronic respiratory diseases (World Health Organization WHO, 2003; Elendu and Akpan, 2012). Globally, the most prevalent non-communicable or chronic diseases include heart disease and stroke, cancer, chronic respiratory disease, and diabetes (WHO, 2005; 2008). These and other chronic diseases are the major causes of death (60%) and disability world-wide, taking the lives of over 35 million people in 2005, including many young and those in middle age (WHO, 2005). Accordingly, all these diseases are preventable or the risks are reduced through participation in exercises.

The results also revealed a significant relationship between respondent's perception of the need for physical activity and involvement in PA for quality living. This result implies that the higher the perception of the need for PA the higher the involvement in it. Contrary as portrayed in the result of the study, despite the high perception of the need for PA, involvement is still low. This result is in agreement of Etuk (2007) who observed poor involvement of academic staff in PA. Other studies in support of the lack of involvement of academic staff in PA are these of Onohwakpor and Eboh (2006) and Keating et al (2007).

In view of the above revelation of poor participation in exercise by the respondents it is important to note that academic staff productivity and the environmental factors affecting them and the efficiency of this strategic human resource cannot be left behind without assessment and intervention to promote their health; otherwise such negligence will bring

about great costs because of the amount invested in higher education. Therefore, the community which is supposed to benefit from scientific and technological development and ultimately the sustainable development in educational, cultural economic and political aspect will be at a loss.

Conclusion

It was concluded that academic staff in universities in the area of study do have high perception of the necessity of physical activity for quality living. However, it was found that the level of actual involvement of academic staff in physical activity (PA) was low. The result also showed that there was a significant positive relationship between perception of the necessity of physical activity for quality living and involvement (participation) in it.

Recommendations

- From the results of the study, academic staff should be motivated by the University by making policy on participation in physical activity during working hours and leisure time.
- Academic staff should be more practically concerned about their health by finding time to exercise meaningfully.
- Incentives could be given to those who actually participate in physical activity.

REFERENCES

1. Adeogun, F. and Dansu, T., (2006). Exercise and fitness behaviour of market men and women in Badagry LGA Lagos State, Nigeria, *Journal of International Council for Health, Physical Education, Recreation, Sport and Dance* 1(2), pp. 55- 58.
2. Ajala, J., (2005). "Health education in wellness and sickness: This day, this age", An Inaugural lecture delivered at the University of Ibadan, Ibadan, Nigeria.
3. Akeredolu, O.A. and Adefuye, M.A., (2008). Determinants of physical activity participation in optimizing wellness among adults in rural areas of Lagos State, Nigeria, 4th International Council for Health, Physical Education, Recreation, sport and Dance (ICHPER-SD) African Regional Congress 14th-17th October, 2008 in Gaborone, Botswana.
4. American Cancer Society, (2007). Physical activity and cancer. Available http://www.cancer.org/acs/groups/content/@nho/documents/document/physicalactivityandcancerpdf.pdf.
5. Berman, A. and Snyder, S., (2012). *Kozier & Erb's Fundamentals of Nursing: Concepts, Process and Practice,* (9th Edn.), New Jersey, Pearson Education, Inc.

6. Bulugbe, T.A. and Oloyede, T.A., (2007). The place of physical activities and wellness in achieving Millennium Development Goals, *Journal of International Council for Health, Physical Education, Recreation, Sport and Dance,* 1(2), pp. 21-24.
7. Centre for Disease Control, (1999). A new view of physical activity at a glance available: http:// www.cdc.gov/nccd php/sgr/ataglan.htm (15th Feb., 2005).
8. Dishman, R., Oldenburg, B., O'Neal, H. and Shephard, R., (1998). Worksite physical activity intervention, *American Journal of Preventive Medicine,* 15(4), pp. 344-361.
9. Doyle, J.A., (2005) The benefits of exercise (online) available: http: // www.2.gsu.edu/www fit/benefits. Html. (15th Feb., 2005).
10. Elendu, I.C. and Akpan, U.S., (2012). Ensuring quantity and quality of life for employees through physical activity as preventive medicine tool against non-communicable diseases in Nigeria, *Academic Research International,* 2(3), pp. 696-702.
11. Elisabete, C., Marandi, D.S., Ivan F.J. and Fermanda, L., (2007). Quality of life of people living with HIV in Sao Paulo, Brazil, *Rev Saude Publica,* 741 (Suppl. 2), p. 647.
12. Eshragi, H., Kashef, M.M. and Mehri, K., (2012). Comparative study of Iranian Universities active and inactive academic members' general health conditions, *Annals of Biological Research,* 3(2), pp. 899-907.
13. Etuk, G.K., (2007). Sports, academic and student personnel management in Nigerian Universities. Nigerian University Games Association (Nuga), Multi-demensional approach to sports development through the University System, Port Harcourt, Nigeria, University of Port Harcourt Press.
14. Eyre, H., Khan, R., Robertson, R.M., Clark, N.G., Doyle, C., Hong, Y., Gansler, T., Glynn, T., Smith, R. A. Taubert, K. and Thun, M.J., (2004). Preventing cancer, cardiovascular disease, and diabetes: A common agenda for American Cancer Society, the American Diabetes Association, and the American Heart Association, *Circulation,* 109(25), pp. 3244-3255.
15. Joshua, A.M., Samson-Akpan, P.E., Eyo, M.B. and Joshua, M.T., (2012). Determinants of Nigerian University teachers participation in physical activity towards health promotion, *Continental J. of Nursing Science,* 4(2), pp. 1-10.
16. Keating, X. D., Haung, Y. Haung, J., Chen, L., Pinero, J. C., Bridges D., & Deng, M. (2007). Promoting University personnel's physical activity behaviours: A review and synthesis. *The ICHPERSD Journal of Research in Health, Physical Education, Recreation, Sport & Dance*, 11(1), pp. 1-5
17. Karmisholt, K. and Gotzesche, P.C., (2005). Physical activity for secondary prevention of diseases. Systemic review of randomized clinical trials, *Dan. Med. Bull.*, 52(2), pp. 90-94.
18. Mayo Clinic Staff, (2004). Your fitness program tips for staying motivated, available http//www.mayoclinic.cominvoke. cfm? Id=HQ01443 (15th February, 2005).
19. Marcus, B.H., (1995). Exercise behaviour and strategies for intervention, *Research Quarterly for Exercise and Sports,* 66, pp. 319-325.
20. Ntui, E.P., (2000). *Aerobics and Prolonged Intensive Studies for Secondary and Tertiary Institutions,* Calabar, University of Calabar Press.
21. Nutristrategy, (2004). "Health benefits of exercises (online) available: http: // www.Nutristrategy.com/health.Htm (15th Feb. 2005).

22. O'Brien, S., (2005). The benefits of exercise for seniors: it is never too late to improve your health, available: http//senior living, about .com/b/a/137067.htm (Feb 15, 2005).
23. Okeneye, R.E., (2002). Regular exercise and individual's health, *Nigerian Journal of Physical, Health Education and Recreation (NIJHER),* 2, pp. 5-10.
24. Omolawon, K.O. and Mohammed, S., (2006). Perceived determinants associated with non-participation of University of Ibadan academic staff in sport and physical activities, *Journal of International Council for Health, Physical Education, Recreation, Sport and Dance,* 1(2), pp. 97-100.
25. Onohwapor, A.E.O. and Eboh, L.O., (2006). Percieved barriers to recreational activities for healthy living among academic staff of College of Education, Warri, Delta State, *Journal of International Council for Health, Physical Education, Recreation, Sport and Dance,* 1(2), pp. 109-133.
26. Humpel, N., Owen, N. and Leslie, E., (2002). Environmental factors associated with adults participation in physical activity: A Review, *American Journal of Preventive Medicine*, 22, pp. 188-199.
27. Orleans, C.T., Kraft, M.K., Marx, J.F. and M.C. Ginnis, J.M., (2003). Why are some neighbourhood active and others not? Charting on the policy and environmental determinants of physical activity. *Annals of Behavioural Medicine*, 25, pp. 77-79.
28. Pierce, D., (2008). Exercise for diabetes prevention and treatment. Today's Dietician, available http://www.todaysdietician.com/newarchives/092208p8.shtml
29. Rosenstock, I.M., (1974). Historical origin of the Health Belief Model, In: Becker, M.H., Eds., *The Health Belief Model and Personal Health Behavior,* Thorofare, N.J. and Charles B. Slack.
30. Shepherd, R., (1997). Exercise and relaxation in health promotion, *Sports Medicine,* 23(4), pp. 211-216.
31. Umeifekwem, J.E., (2011). Awareness of health-related benefits of physical activity (PA) and habitual participation in PA among under-graduate students in selected universities, *International Journal of Education Research,* 11(1), pp. 226-232.
32. United State Department of Health and Human Services (USDHHS), (1996). Physical activity and health. A report of Surgeon general. Atlanta, G.A., US Department of Health and Human Services, Centre for Chronic Disease Prevention and Health Promotion.
33. U.S. Department of Health and Human Services, (2002). Physical activity fundamental to preventing disease, U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, available http://aspe.hhs.gov/health/reports/physicalactivity/physicalactivity.pdf
34. Warburton, D.E.R., Nicol, C.W. and Bredin, S.S.D., (2006). Health benefits of physical activity: The evidence, *Canadian Medical Association Journal*, 174(6), pp. 801-809.
35. World Health Organization, (WHO), (2003). Health and Development through physical activity and sport, Geneva, WHO.
36. World Health Organization, (2005). Chronic diseases and common risk factors, Geneva, WHO.
37. World Health Organization, (2008). The global burden of disease: 2004 update, Geneva, WHO.
38. World Health Organization, (2010). Global recommendations on physical activity for health, Geneva, WHO.