The Psychological Health and Wellbeing Benefits of Organised Sports and Physical Activities among Nigerian Prisoners

Ayobami Honestus Obadiora

Department of Kinesiology, Health Education and Recreation, Obafemi Awolowo University, Ile-Ife, Nigeria ayobadiora@yahoo.com

Aderonmu, Kehinde Adebayo

Department of Kinesiology, Health Education and Recreation, Obafemi Awolowo University, Ile-Ife, Nigeria kennydudu 05@yahoo.com

Abstract

Imprisonment is a major factor responsible for personality disorders characterized by increased stress, depression, anxieties and chronic restlessness among inmates. The study investigates the impacts of active involvement in sports on the perceived psychological health by inmates of Ilesa Prison Yard in Osun State of Nigeria. The research is an experimental study through which the respondents were exposed to pretest instrument, intervention and the posttest questionnaire. This study held for 10 weeks during which a total number of 140 inmates were selected as respondents. The psychological wellbeing instrument of the Quality of Life scale (WHOQOL-BREF) of the World Health Organization (WHO) was modified and used in the investigation. The collected data were analyzed with both the inferential and descriptive statistics. The study showed positive impact of athletics (r=0.576), badminton (r=.544), table-tennis (r=.773), volleyball (r=.497) on the self-reported psychological health by male prisoners. The result is found significant at (P<0.05). In conclusion, it was postulated that participation in sport activities present positive impact on the perceived psychological health among the male prisoners in Nigerian prison yard, in Ilesa, Osun State of Nigeria.

Key words: Health, prisoners, prison, physical activities, psychological, sport, wellbeing

Received 6 February 2018/Accepted 28 February 2019 ©JEHCP All rights reserved

Introduction

The environment of prisons in Nigeria is generally harsh. A series of reasons are responsible for the harsh prison environment where adherence to rules, regulations and daily schedules and routines must be strictly followed. Also in the prisons, inmates are often exposed to stress, boredom and bullying either by the fellow inmates or by the prison officials. These situations are widely linked to detrimental impact on mental and psychological health of prisoners (Birmingham, 2003). There are series of studies conducted on prison inmates which revealed that the quality of life of inmates is usually poor (Skyes, 2006). There are few studies on the effect of sport and physical activities on the psychological wellbeing of prisoners. Some of the studies done in this area were done in developed countries, nevertheless the connection between sport and health quality of life has witnessed a substantial increase in recent times in some Asian and European countries. Therefore, this study was carried out to expand the understanding about how participation in physical activities and sport will impact the psychological health and wellbeing of prisoners in Ilesa prison in South Western Region of Nigeria. Precisely, the investigation was done to determine the effect of active involvement in sport and exercises on the self-reported psychological health by the prisoners selected for the study. The Council of Europe (2001) explained participation in sports as the involvement in different kinds of organized physical activities which could be at leisure or recreational and at competitive level, the activities are planned to improve fitness and wellbeing, physically or mentally, to enhance relationship and social interaction which can result through competitive or recreational sports or physical activities. In a study conducted by Rejeski and Mihalko (2001), it was observed that active involvement in physical sport activities present substantial consequence subjective quality of life and wellbeing. The effect of sport is noted across different population groups, different levels and kind of activities. The observation was found consistent regardless of the type of instrument used in measuring the general quality of life and each of the different domains of, psychological and mental health, environmental and social wellbeing and the physical health. Also, as discovered through another study conducted by Netz and Wu (2005), it was also noted that irrespective of how the quality of life including its psychological health is measured, a positive association is noted with active involvement in physical activities across all socio-demographic groups of the respondents. Though, Netz and Wu (2005) observed that the association between groups is small, the impact of participation in physical activities on improved mental health across the groups is significant. It is however considered important to determine which factors may limit the impact of sport and physical activities on psychological health from an implementation perspective (Obadiora, 2017).

Psychological Health of Prison Inmates

Psychological wellbeing is linked to mental, behavioral and emotional balance and satisfaction with personal experiences. Stewart-Brown and Janmohamed (2008) stated that psychological wellbeing is linked to the psychological functioning, capability of individual to be involved in a mutually beneficial relationship and satisfaction with life. This assertion is further corroborated by Fava & Ruini (2003) when they stated that psychological wellbeing can be referred to as the experience of a condition of self-dependence, competency, self-approval or appreciation, feelings of affiliations and belonging, attainment of desires and set goals. It was further noted that poor psychological wellbeing is common among prisoners in Nigeria (Abiama and Etowa, 2013). Also, other studies on quality of life of inmates confirmed poor self-reported mental wellbeing among prison inmates irrespective of their age (Temane and Wissing, 2006 and; Obadiora and Obadiora, 2018). Further studies revealed that the psychological wellbeing of inmates seems to be more affected as they experience more traumatic experience significant enough to cause negative alteration in mood and thinking which may further result in personality disorders, behavioral and emotional maladjustment due to incarceration (Van Herreveld, Van Der Plight, and Van Dijik, 2007). A comparative review of several researches involving general population and prison inmates showed that inmates present poor selfreported (subjective) quality of life when compared with the general non-clinical population. It was further noted that low self-esteem across groups of inmates were observed (WHO, 1998 and; Castellano and Soderstrom, 1997). It was also believed that psychological wellbeing is presented through optimum presentation of behavioral and emotional adjustment (Mefoh, Okafor, Ezeah and Odo, 2015). Wooldredge (1999) observed that psychological wellbeing is reflected through the prisoners' experience of uncertainty, anxiety, hopelessness, resentment, poor sense of self-worth and isolation while within the foul walls of prisons. Studies noted that various social programs available to inmates inside prison may reduce incidence of stress, anxiety and anger due to feelings of hopelessness and isolation while in confinement, meanwhile the effects of intervention are dependent on the individual needs of the inmates (Toch, 1977).

Also, Ryff (1989) noted that psychological health is a positive component of mental wellbeing which components include high self-worth and self- approval, understanding of physical and social environment and positive social interactions with people. Also, positive psychological health condition indicates the occurrence of adequate physical growth and development, living a purposeful life and ability to live a self-dependent life (Ryffand Keyes, 1995 and; WHO, 1998). In the study carried out by Helson and Srivastava (2001) using the adapted Ryff's (1989) scale showed a substantial improvement of self-reported wellbeing of general population as it concerns their psychological and mental health. The study further reported an improved control of emotion and development of psychosocial personality, self-knowledge and daily fulfillment. In another study carried out by Keyes et al., (2002) it was observed that psychological wellbeing increases with age and education while it decreases with feelings of restlessness, worry, nervousness, distress, exasperation, resentment, regret and miserable and erratic temper (Keyes et al., 2002). However, Ryan (1997) identified the positive impact of incorporating therapeutic sport and physical activities on the reduction in mental ill-health among people with emotional problems and psychological disorders. It was particularly observed that confined population with health and social disability can easily regain confidence and self-esteem and self-esteem through participation in organized physical activities while undergoing corrections or treatment of psychoactive substance addictions (Mattson, 1992; Ryan, 1992 and; Obadiora, 2003).

Psychological Adjustment to Imprisonment through Sport

Population in confinement is faced with several pressure of imprisonment due to the highly regimented life in prison. Every prison inmate is subjected to many pressures of highly regimented life during institutionalization, and individual inmates respond in different ways with different levels of psychological change as required for adaptation to life within the four walls of correctional facilities. Adaptation was defined by scholars as a "psychological processes through which people adjust or cope with the challenges of everyday's life" (Weiten, Dunn and Hammer, 2011) while coping is regarded by Buetler and Moos (2003) as every stressful

situation with categorical pattern through which an emotions, behaviors and perception of individuals prepare them for adapting or changing to the norms of their environment (Mefoh, et al, 2015). There are lots of strategies adopted by prison authorities to promote inmates adjustment to imprisonment as ability of inmates to cope with stress of imprisonment is believed to enhance the achievement of psychological outcome. Coping is defined as every effort provided to enable individual inmate control, overcome and endure the negative experiences and consequence of confinement within the four walls of prison (Sohi, 1988; Weiten, et al, 2011 and; Obadiora, 2017). Many research findings reported positive impact of sport on inmates' adjustment to prison life. Weiten, et al (2011) and McAuley (1994) noted that there is an improvement in the general feelings of self- value and self-importance following active engagement in organized sporting events. In another study, Berger (1996) identified the positive influence of sports in four general areas of improved temperament, reduction of trauma, development of self-worth and enhanced general wellbeing (Hickmanet al, 1999). Sport in prison is considered relevant and cost effective thereby making its implementation possible in resource-poor correctional facilities as obtainable in Nigeria, it is therefore considered important to plan physical activities and sport for inmates in such a way that will assist them to reduce stress and anxiety and improve their low self-value. Promoting sport activities among inmates can facilitate the process of adjustment to life in prison. Inmates engagement in sport and other forms of recreational activities can further assist prisoners to cope with life in confinement (Obadiora, 2016). Coping is any effort, whether social, physical or psychological, which can be used by the individuals to mitigate the psychological impacts of stressful or traumatic situation caused by imprisonment. Wooldredge (1999) believed that the ability to mentally and socially cope with the challenges of imprisonment has direct implications on the success of the prison's rehabilitation programs. Coping with confinement has also been linked with reduction in the inmates' exhibition of violent behavior caused by persistent state of anxiety and depression. Also, McAuley and Morris (2006) noted that the values of active engagement in physical activities and sports include reducing the stressful situation. Participation in sports provide opportunities to release pent up energies of inmates and provide them with opportunity for release of tension, reduce stressful situation, promote self-esteem and selfworth which are the determinants of self-reported quality of life, most especially the psychological wellbeing of general population. Various research findings recognized the outcome of sport participation to include enhanced resilience and recovery from and adjusting to adversity (Bakker, Whiting and van der Brug, 1996; Lester & Russell, 2008 and Steptoe, 1996). It was further determined by Woods, Hassan and Breslin (2017) that psychological wellbeing of general or special population can be improved through regular involvement in sport. It is therefore, believed that the findings of this research will provide empirical evidence on the contributions of organized sports in promoting mental adaptation, psychological rehabilitation and social integration of inmates. The findings of this study will provide evidence on the use of sport for improved psychological health of inmates in resource poor prison settings as common in Nigeria.

Method

Study Setting

The study was carried out in Ilesa Prison Yard in Osun State, Nigeria. This correctional facility belongs to the Nigeria Prison Service (NPS). The prison is a medium security facility. The prison is located at Ayeso area, along Ife Road, adjacent to the Headquarters of the Nigerian Police Command Headquarters in Ilesa. According to the record of the prison, the facility was commissioned in 1943 and it has the capacity to accommodate 600 inmates. The prison is overpopulated with inadequate sleeping provisions and sanitation amenities. The prison has a playing field of about 60m by 80m in dimension with goal post areas for playing football. There is absence of basic sporting equipment in the correctional facility which makes the open field to be rarely put into use except for few inmates who use the space for physical exercises.

Design

This study made use of a scientific research designed method. The experimental study selected a total number of 140 respondents as respondents through a multi-stage, systemic random

sampling technique. The selected respondents were further randomized into experimental and control groups. The duration of the study was 10 weeks. The pre-test questionnaire was administered in the first week of study to collate initial opinion of the respondents on their psychological wellbeing. Following the administration of pre-test questionnaire, the inmates in experimental group were exposed to sporting activities (athletics, table-tennis, badminton and volley-ball) including training on the sports regulations and officiating between the second and the ninths weeks of the study. The post-test questionnaire was administered to all the respondents in both the experimental and control groups on the tenth week of the study.

Sampling

The study respondents comprised the male inmates within the four walls of Ilesa prison. Those selected for the study include the convicted and the awaiting trial detainees (ATDs) in the selected prison yard. The study respondents were selected among the inmates population through multistage systematic random sampling technique. Those inmates selected were within the ages of 20 and 35 years as the period was noted by Shephard (1998) to represent the time of peak physiological and physical performance as required for active sport involvement essential for the study. Irrespective of the inmates' age, the study further excluded those with any forms of mental or other ill-health conditions including physical disability and those already sentenced to death. Thereafter, the 140 inmates selected were randomized into two groups of experimental and control with each of the two groups further randomized into four sub-groups (athletics, table-tennis, badminton and volley-ball) to enable comparison of collected data between the groups.

Method of Collecting Data

The collection of data for the study was done through the administration of the pretest and posttest subjective psychological health instrument which was the adapted version of the psychological wellbeing items of the World Health Organization's Quality of Life (WHOQOL) scale. The QOL scale is a culturally diverse and universally tested instrument which can be used

across population and culture (WHO, 1998). The WHOQOL is a instrument that is completed by individual respondents for measuring the perceptions of wellbeing as it concerns various aspects of life such as physical fitness and health, social wellbeing, psychological health and environmental wellbeing. For the purpose of the study, the psychological items of the instrument were extracted and adapted. The response option was on a scale of strongly agree, agree, neutral, disagree and strongly disagree with higher to lower ranges of 5 to 1 scores respectively.

The reliability of the QOL scale was tested on Cronbach's alpha. The overall QOL scale has an internal consistency of 0.89 while the internal consistency of the instrument on the individual domain ranged from 0.74 to 0.77. The scale therefore demonstrated adequate internal consistency. Also, the assessment of the criterion related validity of the instrument was done by correlating the general QOL and the scores of its specific domain of psychological health. A positively significant correlation was observed while testing the all the items with Pearson's r wit a range of 0.38 to 0.63 for overall QOL while the range is 0.32 to 0.47 for individual QOL (WHO, 1998; Oladimeji, 2005 and; Krägeloh, Henning, Hawken, Zhao, Shepherd and Billington, 2011). The adapted psychological health QOL scale used for the study is as follows as follows:

Table I
Psychological Health Questions and their appearances in the WHOQOL-BREF Instrument

Domain	Psychological Health Aspect	Item No.
Psychological	Feeling of confidence	5
Health	Personal and religion beliefs	6
	Thoughtful, rational thinking and attentive	7
	Self-concept	11
	Self- dependence	19
	Negativeemotion	26

Ethical Considerations

The study proposal was presented for the review and approval of the academic research committee set up for the purpose by the Obafemi Awolowo University Postgraduate College as required for the postgraduate project. The study was also reviewed by the legal department of the Nigerian Prison Services (NPS), Osun State Command after the ethical review of the study methodology, a recommendation for approval was made to the State Comptroller of Prisons which was eventually granted. The study also secured the verbal permission of all the inmates in the prison before the commencement of the sport participation project while the written consent of the selected respondents was obtained. All the respondents are aware of their right to discontinue participation whenever they so desire.

Analysis

The data collected across sub-groups were analyzed with inferential and descriptive statistics comprising of standard deviation, mean scores and the analysis of variance (ANOVA). The level of statistical significance is set at p<0.05.

Results

The standard deviation and mean scores for participation in sports and psychological health and wellbeing of inmates were collated. In the Table 2, the mean and standard deviation scoresof respondents' perception on psychological health after active engagement in the games of volleyball, badminton, table-tennis and athletics were shown. The scores were collated and analysed to determine interactional effect of active involvement in physical activities and sports and psychological wellbeing using the Pearson's product moment correlation coefficients, multiple regression analysis and the analysis of variance (ANOVA). The results of analyzed information were presented in the Tables 3 and 4 as follows:

Table 2
Standard Deviation and Mean of participation in physical activities and perceptions onpsychological health

Subjects		Sport Participation Score			Psychological WellbeingScore				
		Athletics N= 16	Badminton N=16	Table Tennis N=14	Volley ball N=24	Athletics N= 16	Badminton N=16	Table Tennis N=14	Volley ball N=24
Experimental	Mean (X)	5.34	5.09	5.96	5.40	24.53	23.41	24.18	26.56
	ŠĎ	2.548	2.988	3.294	2.819	6.965	7.255	8.411	7.798
Control	Mean (X)	3.41	3.75	3.07	4.35	22.00	18.38	17.00	24.23
	ŠĎ	1.341	.842	.858	1.564	4.628	4.723	4.329	5.284

Table 3 below showed the result of the impact of active involvement in different physical activities and sports on the self-reported psychological health by the respondents. The results obtained from the control and experimental groups across the different sports were merged and analysed with ANOVA to find out if the differences identified in the observations were significant statistically or not. The result showed that the calculated F-ratio of 19.546 were significant at p=0.000 when the responses on the perceived psychological health were tested at 0.05 level of significance.

Table 3
Result of analysis of variance of the impact of active involvement in sports and psychological healthperceptions

ANOVA						
Sum of squares	df	MS	F	Sig.		
5723.812	10	572.381	19.546	.000		
7877.298	269	29.284				
13601.111	279					
	Sum of squares 5723.812 7877.298	Sum of squares df 5723.812 10 7877.298 269	Sum of squares df MS 5723.812 10 572.381 7877.298 269 29.284	Sum of squares df MS F 5723.812 10 572.381 19.546 7877.298 269 29.284		

In the Table 4, the observations reported by the respondents were shown as analyzed using multiple regression which shows that the inmates' psychological health and wellbeing increased

following their participation in athletics (= 1.012). Nonetheless, the findings report with t-test result reveals a significant impact of active engagement in the athletic events on the psychological wellbeing outcome among the inmates is not statistically significant. Also, the ttest result (t = 1.417; p =.071) established this finding. Findings further revealed that inmates' psychological health and wellbeing increases as they participated in badminton (= 4.023). Unlike athletics, there is a statistically significant contribution of badminton to prisoners' psychological health and wellbeing. Also, this is confirmed by the t-test result (t = 8.903; p = .000). Considering the multiple regression summary as presented in the Table 4, the findings show that participation in sports increases the psychological health and wellbeing perceptions of inmates (= 2.301). Reviewing the effect of specific sport using t-test showed statistically significant effect (t = 6.421; p =.000) of participation in Table Tennis on the psychological health and wellbeing outcome among the prison inmates. Similarly, findings reveal that the psychological wellbeing of the inmates' increases with participation in the game of volley ball (= 4.512). Further, the same positive effect of volleyball participation on psychological health and wellbeing of the inmates is observed using the t-test and this is significant statistically (p = .001). These entire variables' cumulative R-square was put at 0.532. The model adequately fit the data as indicated by the coefficient of determination (R-square). The predictors variables entered into the regression model translated into the fact that about 53.2% of variance in the inmates' perception of their psychological health and wellbeing. This finding showed a positive relationship between active involvement in physical activities and sports and psychological health perception of the respondents.

Table 4
Coefficients of Regression Analysis of participation in physical activities and perceptions on psychological health

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.
		Std. Error	Beta		
(Constant)	18.613	3.911		4.227	0.000
Athletics	1.012	.009	686	1.417	0.071
Badminton	4.023	.186	.216	8.093	0.000
Table-Tennis	2.301	.972	.501	6.421	0.000
Volley Ball	4.512	.512	396	5.421	0.001
,		R-Squar	e = 0.532, Adjuste	ed R-Square =	= 0.606

a. Dependent Variable: Psychological Well being

Following the review of all the findings on the psychological health outcome of participation in table-tennis, volleyball, athletics and badminton by the selected respondents inside llesa Prison Yard, the study concluded that there is a significant impact of active participation in organized physical activities and sports on the psychological wellbeing perception among the male prisoners.

Discussion

This study was aimed to investigate the impact of sport participation on the psychological health outcome of inmates of llesa prison. The study framework will enable the conceptualization and implementation of Prison Based Sports Programme (PBSP) in enhancing the psychological health and rehabilitation of inmates during confinement. The psychological wellbeing components investigated include confident feelings; adverse feelings; personal and religion beliefs; thoughtful, knowledge, rational thinking and attentiveness; self-acceptance, self-assurance and; self-confidence. These aspects form the psychological wellbeing domain of the quality of life (WHO, 1998). The study finding revealed positive influence of participation in different sports on the investigated components of psychological health.

p. <0.05

This finding of this study therefore agreed with previous findings that sport participation decrease negative thinking (Schafer, 1992), promote the individuals sense of self-value (Goudas, Dermitzaki and Bagiatis, 2001 and; Schafer, 1992), enhance the sense of confidence and assurance and rational reasoning (Rejenski, Shelton, Miller Dunn, King and Sallis, 2001; Walters and Martin, 2000). It was postulated that sports also enhance motivation, confidence and ability to exhibit self-control and promote confidence in the ability to exert control over one's own behaviour and social environment (Butler, 1996). It was further noted that sports and exercises enhance motivation and reinforce capacity to achieve set goals within and out of sport (Butler, 1996; Goudas et al., 2001), acquired social skills required to be able to withstand self-control, most especially as it concerns the personal feelings and internal aspirations required to sustain performance and achievement (Kerr, 1997), enhance the feelings of confidence, reliance and judgment (Fieldsend, 1981), develop feeling where there is a lack of negativity, such that no pain or discomfort is felt (Fredrickson, 2002) and reduce emotional distress characterized with feelings of fear, anger, anxiety, and suffering (Steptoe, 1996), sports also ensure pleasurable engagement and social interaction with physical environment. This further facilitate passionate, attentive and energetic personalities (Watson, 2002), sport involvement provides opportunities for release of anger and frustration which can ensure the regain and control of emotions (Salovey, Mayer and Caruso, 2002), improve positive psychological reactions of people to events of daily lives (Schafer, 1992), develop and maintain optimal affection, that is, ability to perceive and cope with daily life circumstances in a positive way (Steptoe, 1996), stimulate adaptive emotional release which is a positive response to stressful situation and ensure ability to cope with the environment, thereby playing a critical role in individual survival (Schafer, 1992), reduce the experience of negative emotions and poor self-concept (Schafer, 1992 and; Rejenski et al., 2001) and reduce the sense of hopelessness which negatively affect how ones feel, think and act (Sanders et al., 2000).

Further findings of the study showed consistency with what obtains among general population and psychiatric out-patients undergoing rehabilitation (Obadiora, 2003). The results of this study further agreed with thee earlier reports indicating that participation in physical activities

has been reliably connected several social personality concepts related to self-worth, selfvalue, self-confidence and self-awareness among the general and special, clinical population (McAuley, Blissmer, Katula, Duncan & Milhalko, 2000). Several other growing body of evidence also posited the outcome of participation in physical activities and sports to include improved quality of life and psychological wellbeing as manifested by low stress level, high coping behavior, a positive mental picture of who they are as a person, stable affect – that is, resilience, high cognitive and mental clarity as previous studies reported people think and learn better after participation in sports and physical exercises (Edwards, 2012). Generally, participation in sport is linked to increasing feelings of individuals overall quality of their life and satisfaction which is key indicator of positive sense of mental health and psychological wellness (Wissing and van Eeden, 2002; Malebo, 2004 and; Edwards, 2012). The findings of this study further agreed with previous observations that sport participation stimulates self-acceptance and selfidentity, positive psychological health and general wellbeing as reflected in positive mood, lifestyle, feeling of life satisfaction, consistency, fortitude and resilience including coping with stress (Sohi, 1988; McAuley, Elavsky, Motl, Konopack, Hu and Marquez, 2005 and; Edwards, 2012). The observed increase in self-confidence following active participation in sport activities is linked to the development of personality traits. Sport is believed to be an effective process of enhancing one's personality (Coleman 1961; Butler 1976, Begg, 1996).

The finding of this study also showed that only athletics presents weak effect on inmates' psychological wellbeing. This may be due to the nature of the game such as inadequate space, duration and speed. This is in consistent with Salokun (1990) who believed that structured physical activity programs can offer a variety of situation for acquiring positive self-concept, feeling of acceptance and individual proficiencies like self-consciousness, motivation, social interactive skills and self-expression. These integrated psychological personality skills are predictors of psychological wellbeing. These assertions also agreed with findings of Berger (1996) and Hickmanet al, (1999) that a well structure and organized sport can generate psychomotor mechanism that favors the development of positive feelings about self.

Study limitations

The data for the study were collected only from male inmates. Those selected were also limited to those within the age range of 20 to 35 as study findings revealed that those within the age range are within the peak of physical fitness for maximum participation in physical activities. Over 50% of the total number of inmates in the prison yard was excluded from the study. It is therefore postulated that findings of this investigation may not be applicable to the perception of all the prisoners including those outside the ages of 20 and 35 years and the female inmates.

Recommendations

This study only focused on young, male inmates in a prison yard in Nigeria, a future research involving male and female inmates including those above the age of 35 years and from two or more prison yards spread across different geo-political zones of Nigeria is suggested to enable generalization of findings. Additionally, future studies should consider the influence of prison security type (low, moderate and maximum) and facility grade or depreciation on the psychological health perceptions of inmates is suggested. This study revealed that athletics, unlike the other sporting activities like volley ball, table –tennis and badminton, presents no significant effect on the psychological wellbeing perception of inmates as shown by the result of the t-test analysis. However, further study will be required for further understand of the complexities of influence of nature of different sport and physical activities on the psychological health as this will enable correctional practitioners maximize sport intervention impact.

Conclusion

The study confirmed that prison inmates can benefit from psychological impact of sport participation. The prison rehabilitation effort, coping, adaptation and social reintegration of inmates are critical for promoting the purpose of correctional programs. It was also discovered that inmates' self-esteem and social acceptance is enhanced through sport performance skills which will promote self-esteem and confidence and social acceptance and reduce stigma, isolation and the risk of recidivism or prison reentry. Sport in prison is cost-effective and vital

for inmates' rehabilitation, and should be given a topmost priority in developing countries and resource poor correctional institutions. The comparative review of the results of this investigation with previous researches carried out in prison yards across developed countries further emphasized the importance of sports inside prisons towards addressing the complex and diverse psychological health needs of prison inmates.

Declarations

Conflict of Interest

There is no conflict of interest known to the authors regarding this study report

Acknowledgement

The researchers wish to express their gratitude to Nigerian Prison Services (NPS), most especially, Comptroller of Prisons, the State Legal officer and the officer-in-charge of Ilesa Prison in the Osun State Prisons Command for their approval of the study in Ilesa Prison Yard. The authors also thank the Sports and the Welfare Officers of Ilesa Prison Yard and all the other officials, for their immense support towards the success of the study. The authors also appreciate the enthusiastic interest and commitment of the respondents to the study and their successful reintegration into the larger society without recidivism.

References

Abiama, E. E., & Etowa, P. E. (2013). The impact of long-term incarceration and solitary confinement on the mental health of prison inmates in Nigeria. *Nigerian Journal of Psychological Research*, 9, 28 – 37

Bakker, F.C., Whiting, H.T.A., & van der Brug, H. (1996). Sport psychology: Concepts and applications. New York: John Wiley & Sons.

Begg, D. J. (1996). Sport and delinquency: An examination of the deterrence hypothesis in a longitudinal study. *British Journal of Sport Medicine*, 30, 335-341

- Berger, B. (1996). Psychological benefits of an active lifestyle: what we know and what we need to know. Quest 48, 330 -353.
- Birmingham L. (2003). The mental health of prisoners. Advances in Psychiatric Treatment 9, 191-201.
- Buetler, I. E., & Moos, R.H. (2003). Coping and coping styles in personality and treatment planning: Introduction to special series. USA: John Wiley
- Butler, G.D. (1976). Introduction to Community Recreation, McGraw-Hill, New York.
- Butler, R. J. (1996). Sport psychology in action. Oxford: Butterworth Heinemann.
- Castellano, T. C., & Soderstrom, I. R. (1997). Self-esteem, depression, and anxiety evidenced by a prison inmate sample: Interrelationships and consequences for prison program. *The Prison Journal* 77 (3): 259-280
- Coleman, J. S. (1961). The Adolescent society. Free Press: New York.
- Council of Europe (2001). The European sports charter. Council of Europe, Brussels, Belgium.
- Edwards, S (2012) Physical exercise and psychological wellness. *International Journal of Mental Health Promotion*, 4(2), 40-46
- Fava, G. A., & Ruini, C. (2003). Development and characteristics of wellbeing: Enhancing psychotherapeutic strategy. *Journal of Behavior Therapy and Experimental Psychiatry*, 34, 45 63.
- Fieldsend, J. R. (1981). The interrelationship of physical fitness, somatotype, body cathexis and personality in a group of white school boys. Unpublished M.A. Dissertation: Rhodes University
- Fredrickson, B. L. (2002). Positive emotions. In Snyder, C.R. and Lopez, S.J. (eds), Handbook of Positive Psychology. Oxford University Press.
- Goudas, M., Dermitzaki, I., & Bagiatis. K. (2001). Motivation in physical education is correlated with participation in sport after school. *Psychological Reports*, 88, 491 496.
- Helson, R., & Srivastava, S. (2001). Three paths of adult development: Conservers, seekers and achievers. *Journal of Personality and Social Psychology*, 80, 995-10.

- Hickman, S. A., Lee, R. E., Sallis, J. F., Castro, C. M., & Chen, A. H. (1999). The association of physical activity change with self-esteem in ethnic minority women: a prospective analysis. *Journal of Gender, Culture and Health*, 4(94), 281-292.
- Kerr, J.H. (1997). *Motivation and emotion in sport: Reversal theory*. East Sussex: Psychology Press.
- Keyes, C. L.M., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology*, 82, 1007-1022.
- Krägeloh, C.U., Henning, M.A., Hawken, S.J., Zhao Y, Shepherd, D., & Billington, R (2011). Validation of the WHOQOL-BREF Quality of Life Questionnaire for Use with Medical Students *Education for Health*, 24(2), 1-5.
- Lester, W., & Russell, W. (2008). Play for a change play, policy and practice: A review of contemporary perspectives Summary report. National Children's Bureau, 8 Wakley Street, London ECIV 7QE.
- Malebo, A (2004). Sport participation, psychological well-being and psycho-social development in a group of young black adults. Unpublished Dissertation (article format) submitted Magister Artium in Psychology, North West University.
- Mattson, R. H. (1992) 'Prescribing health benefits through horticultural activities', in Relf, D. (ed). The role of horticulture in human well-being and social development: A national symposium. Timber Press, Portland, Oregon; 161 - 168.
- McAuley, E. (1994). Physical activity and psychosocial outcomes. in Bouchard, C., Shepard, R. J. and Stephens, T. (eds) *Physical activity, fitness and health: International consensus and proceedings*. Champaign, IL, Human Kinetics: 551 567.
- McAuley E., Blissmer B., Katula, J, Duncan, T.E., & Mihalko, S.L. (2000). Physical activity, self-esteem, and self-efficacy relationships in older adults: a randomized controlled trial. *Ann Behav Med.* 2000; 22(2):131-139.
- McAuley E., Elavsky S., Motl R.W., Konopack J.F., Hu L, and Marquez, D.X (2005). Physical activity, self-efficacy, and self-esteem: longitudinal relationships in older adults. *J Gerontol B Psychol Sci Soc Sci*, 60(5), 268-275.
- McAuley, E., and Morris, K.S (2006). Advances in Physical Activity and Mental Health: Quality of Life. American Journal of Lifestyle Medicine. Vol. X No. X. 2007.

- Mefoh, P.C., Okafor, A. E., Ezeah, E. L., and Odo, V.O. (2015). Relationship between Coping Strategies and Psychological Wellbeing of Enugu (Nigerian) Prison Inmates. European Journal of Social Sciences; 47(3) pp.270-277. www.europeanjournalofsocialsciences.com/
- Netz, Y. and Wu, M. (2005). Physical activity and psychological well-being in advanced age: a metaanalysis of intervention studies. *Psychol Aging*. 2005; 20(2):272-284.
- Obadiora, A.H (2003). Correctional Recreation in the Psychological Treatment and Rehabilitation of Drug Dependents in Yaba Psychiatric Hospital and Neuro-Psychiatric Hospital, Aro-Abeokuta. Unpublished M.A. Thesis submitted to the Department of Physical and Health Education, Obafemi Awolowo University, Ile-Ife, Nigeria.
- Obadiora AH. (2016). "The influence of sport participation on quality of life perceptions among inmates in Nigeria prisons." *Journal of Sport for Development* Vol. 4, 2016, pp. 36-43.
- Obadiora, A.H. (2017). Effect of Sport Participation on Quality of Life among Inmates of Ilesa Prison. A project thesis submitted in partial fulfillment of the requirements for the award of Doctor of Philosophy in Physical Education of the Obafemi Awolowo University, Ile-Ife, Nigeria.
- Obadiora, A.H. and Obadiora, A.J. (2018).Relationship of Age and SportsParticipation to Quality of Life among Prison Inmates in Nigeria.Journal of Tourism, Hospitalityand Sports, Vol.36, 2018
- Oladimeji, B. Y. (2005). *Psychological Assessment Techniques in Health Care*. Obafemi Awolowo University Press Limited, Ile-Ife, Nigeria.
- RejeskiVJ, and Mihalko SL. (2001). Physical activity and quality of life in older adults. *JGerontol A BiolSci Med Sci.* 2001; 56(2): 23-35.
- Rejenski, W.J., Shelton, B., Dunn, A.L., King, A.C. and Sallis, J.F. (2001). Mediators of increased physical activity and change in subjective well-being: results from the Activity Counseling Trial (ACI). Journal of Health Psychology, 6(2), 159 168.
- Ryan, A. (1992). 'Positive Gardening The Benefits for Elderly People', Growth Point, Summer 190.
- Ryan, A. (1997). 'The Caring Gardener', Growth Point, Spring 232.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological wellbeing. *Journal of Personality and Social Psychology*, 57: 1069-1081.
- Ryff, C. D. and Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4): 719-727.

- Salokun, S.O. (1990). Effects of training in basketball and field hockey skills on self-concept of Nigerian adolescents. *Int'l Journal of Sport Psychology*, 21(2), 23
- Salovey, P., Mayer, J.D. and Caruso, D. (2002). The positive psychology of Emotional Intelligence. In Snyder, C.R. and Lopez, S.J. (eds), *Handbook of Positive Psychology*. Oxford University Press.
- Sanders, C.E., Field, T.M., Diego, M. and Kaplan, M. (2000). Moderate involvement in sports is related to lower depression levels among adolescents. *Journal of Adolescence*, 35 (140), 5 (1-6)
- Schafer, W. (1992). Stress management for wellness (2ndedn). Harcourt Brace: Jovanovich College Publishers
- Skyes, G. (2006). The society of captives: A study of a maximum security prison. In Y. Jewkes and H. Johnston (Eds.). Prison readings: A critical introduction to prisons and imprisonment. Cullompton: Willan
- Sohi, A.S. (1988). Recreation participation and health outcomes as psychologic influence. In Ajala, J.A. (Ed.) Recreation education for health and national challenges, University of Ibadan, Department of Physical Education Publication. 70-76.
- Steptoe, A. (1996). Sport participation and emotional well-being in adolescents. *Lancet*, 347, 1789-1792.
- Stewart-Brown, S., and Janmohamed, K. (2008). Warwick-Edinburgh mental well-being scale. User guide. Version, 1.
- Temane, Q.M., & M.P., Wissing, (2006). The role of subjective perception of health in the dynamics of context and psychological wellbeing. South African Journal of Psychology, 36(3), pp. 564–581.
- Toch, H. (1977). Living in Prison: The Ecology of Survival. New York: Free Press
- Van Herreveld, F., C.L., Van Der Plight, & W.W., Van Dijik, (2007). Inmate emotion coping psychological and physical well-being: The use of crying over spilled milk. *Criminal and Behaviour*, 34 (5), pp. 697-708.
- Walters, S.T., & Martin, J.E. (2000). Does aerobic exercise really enhance self-esteem in Children? A prospective evaluation in 3rd to 5th Graders. *Journal of Sport Behaviour*, 23(1), 51, 10.

- Watson, D. (2002). Positive affectivity: The disposition to experience pleasurable emotional states. In Snyder. C.R. and Lopez, S.J. (eds), *Handbook of Positive Psychology*. Oxford University Press.
- Weiten, W.; Dunn, D. S and Hammer, E. Y. (2011). Psychology applied to modern life: adjustment in the 21st century. Belmont: Wadsworth
- Wissing, M.P. and van Eeden, C. (2002). Empirical clarification of the nature of psychological well-being. South African journal of Psychology, 32(1). 32 44.
- Woods, D., Hassan, D. and Breslin, B. (2017). Positive collateral damage or purposeful design: How sport-based interventions impact the psychological well-being of people in prison. *Mental Health and Physical Activity xxx* (2017) 1e11
- Wooldredge, J. D. (1999). Inmate experiences and psychological well-being. *Criminal Justice and Behavior* 26 (2): 235-250
- World Health Organization (1998). Mental health promotion in prisons. Netherlands: The Hague.
- WHO (1998). WHOQOL User manual. Division of mental health and prevention of substance abuse. World Health Organization, Geneva, Switzerland. WHO/MNH/MHP/98.4.
- WHOQOL Group (1995). The world health organization quality of life assessment (whoqol): Position paper from the world health organization. Social Science and Medicine, 41, 1403-1409.
- Wooldredge, J. D. (1999). Inmate experiences and psychological well-being. *Criminal Justice and Behavior* 26 (2): 235-250