## COMMITTEE & EDITORIAL BOARD MEETINGS

### Wednesday, September 28

<table>
<thead>
<tr>
<th>Time</th>
<th>Committee</th>
<th>Location</th>
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<tbody>
<tr>
<td>9:00 AM – 12:00 PM</td>
<td>Certification Review Committee</td>
<td>Camelback C</td>
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### Thursday, September 29

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>11:30 AM - 12:30 PM</td>
<td>Past Presidents Council Meeting</td>
<td>Palm 2AB</td>
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<td>TSP Editorial Board</td>
<td>Camelback D</td>
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<tr>
<td>12:30 PM – 1:30 PM</td>
<td>Development Committee</td>
<td>Sierra 1</td>
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<td></td>
<td>Distinguished Student Practice Review Committee</td>
<td>Eucalyptus</td>
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<td>Graduate Program Committee</td>
<td>Foxtail</td>
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<td></td>
<td>Hospitality Committee</td>
<td>Noble</td>
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<td>SIG Coordinators</td>
<td>Sierra 3</td>
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### Friday, September 30

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<thead>
<tr>
<th>Time</th>
<th>Committee</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00 AM - 8:00 AM</td>
<td>CSSEP Editorial Board</td>
<td>Camelback D</td>
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<tr>
<td></td>
<td>Diversity Committee</td>
<td>Eucalyptus</td>
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<td></td>
<td>Ethics Committee</td>
<td>Goldwater</td>
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<td>Fellow Review Committee</td>
<td>Ironwood</td>
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<td>Finance Committee</td>
<td>Sierra 1</td>
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<td>International Relations Committee</td>
<td>Juniper</td>
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<td>Web Presence Committee</td>
<td>Sierra 2/3</td>
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<tr>
<td>7:30 AM – 8:00 AM</td>
<td>Distinguished Professional Practice Review Committee</td>
<td>Foxtail</td>
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### Saturday, October 1

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<th>Time</th>
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<tr>
<td>7:00 AM – 8:00 AM</td>
<td>JSPA Editorial Board</td>
<td>Noble</td>
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<td>Sport Psychology Council</td>
<td>Mesquite</td>
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### 12:30 PM - 1:30 PM

- Community Outreach Committee
- Continuing Education Committee
- Foundation Committee
- Newsletter Committee
- Student Development Committee
- JASP Editorial Board

### Location Codes:
- Camelback C
- Palm 2AB
- Camelback D
- Sierra 1
- Sierra 2
- Sierra 3
- Foxtail
- Noble
- Goldwater
- Ironwood
- Eucalyptus
- Noble
- Goldwater
- Ironwood
- Sierra 2/3
- Juniper
- Noble
- Mesquite
POSTER SESSION I

THURSDAY, SEPTEMBER 29

5:30 pm - 7:00 pm
GRAND BALLROOM A—D

Aggression, Violence, and Moral Behavior

1: Moral Disengagement in U.S. National Collegiate
Athletic Association (NCAA) Division III (DIII)
Collegiate Athletes and Non-athletes
Teri Shigeno, University of Tennessee, USA
Leslee Fisher, University of Tennessee, USA
Mimi Murray, Springfield College, USA

2: Predicting Deviant Behavior in Sports Using the
Extended Theory of Planned Behavior
Sungho Kwon, Seoul National University, Korea
Inwoo Kim, Seoul National University, Korea
Hyunsoo Jeon, Seoul National University, Korea
Sangwook Kang, Seoul National University, Korea
Yunsik Shim, SoonChunHyang University, Korea

3: WITHDRAWN

Anxiety, Stress, and Emotions

4: The Question of Choking: An Examination of the
Concept and Phenomenon of Choking Under Pressure
Ashley Fryer, Florida State University, yes
Gershon Tenenbaum, Florida State University,

5: Profile of pre-competitive state anxiety of
Nigerian college athletes
Olanrewaju Ipinmoroti, Tai Solarin University of Education,
Nigeria

6: An integrated model for emotion research in
sport organizations
Christopher Wagstaff, University of Portsmouth, UK
Sheldon Hanton, Cardiff Metropolitan University, UK

7: The relationships between mindful self-compassion
and pre-competitive state-anxiety of NCAA
women's equestrian team athletes
Nathan Lee, California State University, Fresno, USA
Jenelle Gilbert, California State University, Fresno, USA
Stephanie Reed, California State University, Fresno, USA
Wade Gilbert, California State University, Fresno, USA

8: Intuitive control and positive competitive state
anxiety: New assessments for the prediction of
clutch performance
Deanna Perez, Boston University, USA
Alfredo Leon, California State University, Northridge, USA
Sehvan Sherikian, California State University, Northridge, USA
Stefanee Van Horn, West Virginia University, USA
Rocky Zamora, California State University, Northridge, USA
Mark P. Otten, California State University, Northridge, USA

Burnout and Transition Out of Sport

9: Perceived organizational support of collegiate
student-athletes transitioning out of sport and the
influence on life satisfaction
Paul Knackstedt, The University of Notre Dame, USA

10: Exploring Deselection and Adjustment in Ex-
Professional Soccer Players
Max Avory, Sheffield Hallam University, UK
James Rumbold, Sheffield Hallam University, UK

11: Associations among Optimism, Affect, Life
Satisfaction and Burnout in Collegiate Athletes
Lindsay Smith, UNC-Chapel Hill, USA
J.D. DeFreese, UNC-Chapel Hill, USA
Melissa Fraser, UNC-Chapel Hill, USA
Jason P. Mihalik, UNC-Chapel Hill, USA
Kristen Kucera, UNC-Chapel Hill, USA

Clinical Issues

12: Triggers and Risk Factors of Substance Use Among
College Student Athletes
Blake Riddell, Pacific University School of Professional
Psychology, USA

13: NCAA CHOICES Grants: Promising Initiatives for
Sport Psychology Professionals
Nile Brandt, Ball State University, USA
Nathan McGee, Ball State University, USA
Selen Razon, Ball State University, USA

14: Participation on university sport teams, binge
drinking, and social support among first-year
college students
Chelsey Bowman, Boston University, USA
Jennifer Green, Boston University, USA
Melissa Holt, Boston University, USA

Coaching/Leadership

15: An exploration of the role of the captain in field
hockey: The coach's perspective.
Stewart Cotterill, University of Winchester, UK
James Grant, University of Winchester, UK

16: The Relationship between Perceived Autonomy-
Supportive Coaching Behavior on Motivation Among
High School Athletes
Chelsea Burrell, UNCG, USA
Diane Gill, UNCG, USA
Erin Reifsteck, UNCG, USA

17: Leaders Among Leaders
Ira Martin, United States Coast Guard Academy, USA
Adam Naylor, Boston University/Telos SPC, USA

18: "Sportspersonship" and Positive Coaching Behavior
Vincenzo Aiello, Rider University, USA
Gary Brosvic, Rider University, USA

---------------------------------------22---------------------------------------
19: Coaching Competency and Trust in Coach in Sport Teams  
San-Fu Kao, West Virginia University, USA

20: The Relationship between Servant Leader Coach Behaviors and Achievement Goals in Collegiate Tennis Players: The Mediating Role of Perceived Motivational Climate  
Leah Parton, Eastern Washington University, USA  
Jon Hammermeister, Eastern Washington University, USA

21: Going to Work: Examining a First-Year Experience of Developing a Sport and Performance Psychology Consulting Business  
Katherine Wurst, First15 Sport Performance LLC, USA

22: A case of psychological support through counseling: Following the struggles of a female Olympic athlete  
Masashi Suzuki, Gifu University, Japan

23: Sport psychological support of Paralympic athletes: An Overview of current science and application  
Bernd Strauss, University of Muenster, Germany  
Sydney Querfurth, University of Muenster, Germany  
Kathrin Staufenbiel, University of Muenster, Germany

24: Parent Motivational Climate and Goal Orientations of Female College Athletes  
Tobie Langsam, Springfield College, USA

25: Understanding Sport Expertise Development & Maintenance Through a Developmental, Motivational, and Cultural Perspective  
Elmer Castillo, Florida State University, USA  
Jean-Charles Lebeau, Florida State University, USA  
Seongkwan Cho, Texas A&M International University, USA  
Camillo Saenz, Florida State University, USA  
Graig Chow, Florida State University, USA

Kacey Neely, University of Alberta, Canada  
Kassi Boyd, University of Alberta, Canada  
Nicholas Holt, University of Alberta, Canada

27: Dual Career Balance in Student-Athletes’ University Transition  
Lukas Linnér, Halmstad University, Sweden  
Natalia Stambulova, Halmstad University, Sweden  
James Parker, Halmstad University, Sweden  
Johan Ekengren, Halmstad University, Sweden

28: Still Playing in Traffic: Examining use of psychological skills by today’s pit crew athletes  
Stephanie Stadden, Lenoir-Rhyne University, USA

29: The Relationship between Resilience and NCAA Swimming Times: Does it Contribute to Peak Performance?  
Igor Koval, California State University, Fresno  
Jenelle Gilbert, California State University, Fresno  
Stephanie Moore-Reed, California State University, Fresno  
Wade Gilbert, California State University, Fresno

30: Implementing an In-Season PST Program with Elite Cyclists  
Paul Wright, Lindenwood University, USA  
Christopher Curran, Pedal Hard, USA

31: An examination of the association between grit and the Big Five personality traits in NCAA student athletes.  
Mellanie Nai, University of Wisconsin - Milwaukee, USA  
Barbara Meyer, University of Wisconsin - Milwaukee, USA  
Stacy Gnacinski, University of Wisconsin - Milwaukee, USA  
Monna Arvinen-Barrow, University of Wisconsin - Milwaukee, USA

32: Female Olympic and Paralympic weightlifters’ experiences of preparing for major competition.  
Peter Olusoga, Sheffield Hallam University, UK  
Hugh Gilmore, English Institute of Sport, UK  
Dave Hembrough, Sheffield Hallam University, UK

33: What predicts Mental Toughness in an Athlete’s mind?  
Wonbae Kim, Myongji College, Korea

34: Coaching from the “inside out”: Understanding the role of emotional abilities in elite sports coaching  
Laura Hodgson, Sheffield Hallam University, UK  
Joanne Butt, Sheffield Hallam University, UK  
Ian Maynard, Sheffield Hallam University, UK

35: Exploring relationships among self-talk and balance beam performance in gymnastics  
Erika Van Dyke, Springfield College, USA  
Judy Van Raalte, Springfield College, USA  
Elizabeth Mullin, Springfield College, USA  
Britton Brewer, Springfield College, USA

36: An investigation into role of personality in collegiate athletes’ readiness to engage in psychological skills training  
Gina Emmer, University of Wisconsin-Milwaukee, USA  
Stacy Gnacinski, University of Wisconsin-Milwaukee, USA  
Jennifer Earl-Boehm, University of Wisconsin-Milwaukee, USA  
Monna Arvinen-Barrow, University of Wisconsin-Milwaukee, USA

37: Senior Golfers: An Exploratory Study of Aerobic Fitness, Exercise Enjoyment, and Mood Alteration  
Bonnie Berger, Bowling Green State University, USA  
Lynn A. Darby, Bowling Green State University, USA  
David R. Owen, Brooklyn College of the City University of New York, USA
38: Psycho-Physio Therapy And Its Inherent Benefits Among Higher Institution Staff In Lagos State, Nigeria
Celina Adewunmi, University of Lagos - Akoka, Nigeria

Jessica Smosky, USA
Duncan Simpson, Barry University, USA
Kathy Ludwig, USA
David Feldman, USA

40: Assessing Student Knowledge and Incorporation of Smart Technology into Daily Physical Activity
Nicole Martin, Pacific Lutheran University, USA

41: The development, implementation, and evaluation of an exercise psychology workshop for personal fitness trainers: A mixed-methods approach
Adam Wright, Arete Fitness & Performance Training Inc., USA

42: Empowering health behavior change through fan allegiance in European football: Using contemporary motivation theories to promote health behavior change in the European Fans in Training (EuroFIT) project.
Glyn Roberts, Norwegian University of Sport Science, Norway

43: "I Never Considered Not Doing It": Women's Experiences of CrossFit During Pregnancy
Tanya Prewitt-White, Adler University, USA
Alexandra Bladek, Evolve Performance Consulting, USA
Sarah Forsythe, Adler University, USA
Logan Hamel, Adler University, USA
Mary McChesney, Adler University, USA

44: Does Engagement with Challenge Explain Enjoyment and Boredom in Group Fitness Classes?
Maria Newton, University of Utah, USA
E. Whitney Moore, University of North Texas, USA
Elyse D'Astous, University of Utah, USA

45: Body and mind in yoga: Experiences of yoga teachers
Ineke Vergeer, Victoria University, Institute of Sport, Exercise and Active Living (ISEAL), Australia
Grant O'Sullivan, Victoria University, Institute of Sport, Exercise and Active Living (ISEAL), Australia

46: The Relationship between Undergraduate Students' Effort, Satisfaction, and Attitudes towards Fitness Testing
Daniel Marshall, University of North Texas, USA
Mitch Barton, University of North Texas, USA
Gene Farren, University of North Texas, USA
Paul Yeatts, University of North Texas, USA
Tsz Lun (Alan) Chu, University of North Texas, USA
E. Whitney Moore, University of North Texas, USA
Scott Martin, University of North Texas, USA

47: Results from a Six-Month Pedometer-Based Walking Program for Rural Older Adults: Effects on Self-Efficacy, Affect, and Well-Being
Samuel Forlenza, Shippensburg University, USA
Sally Paulson, Shippensburg University, USA
Dara Bourassa, Shippensburg University, USA
Benjamin Meyer, Shippensburg University, USA
Joohee Sanders, Shippensburg University, USA

48: The relationship between young adults' resilience and physical fitness performance
William Travis, University of North Texas, USA
Paul Yeatts, University of North Texas, USA
Mitch Barton, University of North Texas, USA
Gene Farren, University of North Texas, USA
Tsz Lun (Alan) Chu, University of North Texas, USA
Nicole Hegberg, University of North Texas, USA
Scott Martin, University of North Texas, USA
E. Whitney Moore, Wayne State University, USA

Group Dynamics

49: Passion, satisfaction, and intra-team conflict in sport
Kyle Paradis, University of Western Ontario, Canada
Luc Martin, Queen's University, Canada

50: Visual Anthropology: A Unit of Brotherhood in Gaelic Football
Lindsey Miossi, University of Illinois at Chicago, USA
John Coumbe-Lilley, University of Illinois at Chicago, USA

Injury/Trauma/Rehabilitation

51: Psycho-Emotional Profile of Athletes Who Continue to Participate with Sport Injury
Fanchon Ohlrogge, Ohio State University, USA
Dawn Lewis, California State University, Fresno, USA

52: From Theory to Practice: The Application of Self-Efficacy Theory to People with Disabilities.
Jon Macri, John E. Macri, Ph.D., LLC, USA

53: Preliminary investigation into previously injured athletes' views and experiences of a multidisciplinary approach to sport injury rehabilitation
Monna Arvlin-Barrow, University of Wisconsin-Milwaukee, USA
Damien Clement, West Virginia University, USA

54: A Preliminary Investigation of Re-injury Anxiety in Club Sport Athletes
Stefanee Van Horn, West Virginia University, USA
Damien Clement, West Virginia University, USA

55: Sport Psychology in Pediatric Orthopedic Sports Medicine
Erica Force, Texas Scottish Rite Hospital & Force Sport Psychology & Counseling, USA
Meagan Sabatino, Texas Scottish Rite Hospital for Children, USA
Amanda Fletcher, Texas Scottish Rite Hospital for Children, USA
John Ellis, Texas Scottish Rite Hospital for Children, USA
Phillip Wilson, Texas Scottish Rite Hospital for Children, USA
SAVE THE DATE

October 18 - 21, 2017
Hilton Orlando Lake Buena Vista
Orlando, FL

32nd Annual Conference

ASSOCIATION for APPLIED
SPORTPSYCHOLOGY
PSYCHO-PHYSIO THERAPY AND ITS INHERENT BENEFITS AMONG HIGHER INSTITUTION WORKERS IN LAGOS STATE, NIGERIA

BY

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Department of Human Kinetics and Health Education
University of Lagos

ABSTRACT

Maintenance of a healthy state in this era has received a paradigm shift. With the demand of day-to-day activities, there is need for the body to be conditioned to meet its obligation without breaking down. This study investigated psycho-physio therapy and its inherent benefits. The participants were one hundred and sixty non-academic staff from University of Lagos and Federal College of Education, Akoka, Lagos. They were purposively selected based on sedentary nature of their responsibilities. The participants were further selected randomly into four groups of three experimental and one control. Three hypotheses were tested at 0.05 level of significance. Mean, standard deviation and T-test were used to analyse data. There was a significant difference in the psycho therapy of the sexes [male subjects – (Experimental Group 1: 12.10 > 9.40 and Control Group: 10.35 > 10.10)]; [female subjects – (Experimental Group 1: 12.05 > 9.55 and Control Group: 10.10 > 9.85)]. A slight significance difference were observed in the physio therapy of the sexes [male subjects – (Experimental Group 2: 147.60 < 197.60 and Control Group: 185.25 < 190.25)]; [female subjects – (Experimental Group 2: 143.15 < 193.40 and Control Group: 182.10 < 187.70)]. It was therefore concluded that both therapies have significant impact on health of individuals. Moreover, it was recommended that an holistic approach should be adopted in prescribing physical activity programmes.

Key Words: Exercise, Physical activity, Health, Therapy

Introduction

The trend in health requires paradigm shift. Recent advances in psychological, medical and physiological research (Ilies, Dimotakis & Watson, 2010; Johnson, Weinman & Chater, 2011; Ogden, 2012) have led to a new way of thinking about health and illness. This conceptualization, which has been labeled the biopsychosocial model, views health and illness as the product of a
combination of factors including biological characteristics (e.g., genetic predisposition), behavioral factors (e.g., lifestyle, stress, health beliefs), and social conditions (e.g., cultural influences, family relationships, social support). Galantino, Baime, Maguire, Szapary and Farrar (2005) stressed that changes in the health-care environment during the last decade have affected the roles and responsibilities of all health-care professionals, requiring the maintenance of high quality care through adaptation to an evolving system and its continual demands.

Purdy (2013) quoting Centers for Disease Control (2010) observed that chronic diseases such as heart disease, cancer and diabetes are among the leading causes of death and disability in the United States, and nearly 1 out of 10 Americans suffer significant functional limitations as a result. An expanding evidence base implicates psychosocial etiologies in the pathophysiology of several disease states. Chronic stress exceeding an individual’s capacity to cope affects the brain, endocrine system and the immune system. Integrative medicine practices with the understanding that the mind is inherently inseparable from endocrine, immune and central/peripheral nervous systems, and thus, psychophysiological interventions seek not only to eradicate disease symptomatology but also to enhance health by facilitating the mind’s capacity to optimize physical function (Hoffman, Chatoff, Papas & Kerns, 2007).

Mattke et al (2013) submitted that over the last several decades, an epidemic of “lifestyle diseases” has developed in the world: unhealthy lifestyles, such as inactivity, poor nutrition, tobacco use, and frequent alcohol consumption, are driving up the prevalence of chronic disease, such as diabetes, heart disease and chronic pulmonary conditions. These chronic conditions have become a major burden, as they lead to decreased quality of life, premature death and disability, and increased health care cost. Furthermore, although chronic disease was once thought to be a problem of older age groups, there is a shift toward onset during individuals’ working age that adds to the economic burden, because of illness-related loss of productivity due to absence from work (absenteeism) and reduced performance while at work (presenteeism).

Healthy living cannot be achieved by medication or diet alone. It is a lifestyle that requires dedicated action to overall mental and physical stimulation. Older people can live fulfilling lives as they age if they take initiative and are encouraged to live in a healthy way. There are four areas of focus that will help seniors achieve wellness. They are nutrition, exercise, social
involvement and mental health (Adewunmi & Olayemi, 2015). According to Scully, Kremer, Meade, Graham & Dudgeon et al. (1998) the positive role that physical exercise can play in the prevention and treatment of a range of medical conditions has received a great deal of attention over recent years, with numerous high profile reports supporting the popular message that exercise is good for you. In addition, research has identified the long term protection that regular exercise affords against a plethora of somatic complaints, including coronary heart disease, hypertension, a number of cancers, diabetes and osteoporosis.

A wide array of physical and mental health benefits has been linked with living a physically active lifestyle (Salokun, 2013). Scientific research evidences (Biddle & Mutrie, 2008; Spence, McGannon & Poon, 2005) reinforcing this impression are readily available and numerous within the physiological science and medical scenes. In the field of social sciences also, scholars are not ignorant of the possibility of some relationship between some social psychological parameters and man’s style. There is however the need for a better degree of sensitivity to this relationship by more people in the society. According to McGuirk (2012) engaging in physical activity is one of the best ways to improve physical and psychological health as well as emotional health. Physical activity is defined by World Health Organization (2004) as any bodily movement produced by skeletal muscles that require energy expenditure. It is crucial for an individual to keep physically active as sedentary living doubles the risk of mortality and morbidity by means of coronary heart disease and strokes.

Apart from physiological benefits associated with regularly performed physical exercise, a number of psychological benefits have also been reported in the literature (Edwards, Ngcobo, Edwards & Palavar, 2005; Hassmen, Koivula & Uutela, 2000; Szabo, 2003). These benefits include reduced depression, anxiety and anger, as well as generally improved mood. The potential alleviating effect of physical exercise on negative moods is highly attractive, considering the large number of people in modern society who suffer from physical problems having some type of psychological origin. The prevalence of depression alone is noteworthy—6.8% of men and 12.1% of women reported high rates of depressive symptoms when a sample of the Finnish 55-year-old population was investigated. Depression scores were also found to be higher among those with a sedentary lifestyle than among those exercising moderately. Even higher percentages have been reported for the American population, where the lifetime
prevalence of anxiety and depression has been estimated to reach 20–30% among adults (Hassmen et al, 2000).

Research Hypotheses

The following research hypotheses constituted the basic assumptions for this study:

1. Physiological therapies would not have significant impact on higher institution staff in Lagos state, Nigeria.
2. Psychological therapies would not have significant impact on higher institution staff in Lagos state, Nigeria.
3. Psycho-physiological therapies would not have significant impact on higher institution staff in Lagos state, Nigeria.

Methodology

Quasi experimental research design was used for the study. Participants consist of 160 non-academic staff from University of Lagos and Federal College of Education, Akoka, Lagos, Nigeria. They were purposively selected based on sedentary nature of their responsibilities and consent to participate in the study. The participants were further selected randomly into four groups of three experimental and one control. All data were collected during work free days throughout the duration of the study.

Data were collected using the following instruments: Informed consent form, Treadmill, Bicycle ergometer, Progressive Relaxation Technique by Anshel (1997), Ikulayo Stress Management Approach (ISMA) (2007) and Questionnaire. Experimental group 1 were subjected to physiological therapies that involve Aerobics, a regimen of 30minutes of moderate speed on Treadmill and Bicycle Ergometer. Thereafter, Pulse rate, Systolic Blood Pressure and Diastolic Blood Pressure were taken. Experimental group 2 were presented and guided to use psychological therapies which include Progressive Relaxation Technique and Stress Management Technique of ISMA. A self-structured questionnaire, Adewunmi Psychological Questionnaire (APQ) was administered on the participants to ascertain their perception on psychological therapies they were subjected to. Reliability of the questionnaire was .79
Experimental group 3 on the other hand were administered with combination of physiological and psychological therapies. The control group had no treatment but were given placebo experience.

**Results**

These are comparative analyses of the measurable observations made on the research participants. The analyses were both descriptive as well as inferential in nature; however, based on each variable of interest considered in the research, the analyses include: age group classification based on gender across groups (i.e. 3 experimental groups and 1 control group), average (mean) variables observed in the participants at the pretest as well as the posttest level, and paired-sample t-test on the differences observed between the pretest and posttest level. Using the Statistical Packages for Social Sciences (SPSS) and Microsoft Excel as softwares for the analyses, the analyses were conducted on 160 sampled research participants that responded to the research instrument (i.e. questionnaires).

**Age Group Classification based on Gender across Groups per Variable of Interest**

Fig.1: Gender-based Age Grp Distribution for Grp.1  
Fig.2: Gender-based Age Grp Distribution for Grp.2
The first four figures above are *Stacked 3D Column Charts* respectively. A keen observation at each of them informs that the study involved 20 males and 20 females in each of the response groups (i.e. 3 experimental groups and 1 control group); this implies that a total of 40 respondents were sampled into each of the four groups in order to make a total of 160. Moreso, from the fact that simple random sampling was used, each of the *3D Column Charts* reveals age group classification with respect to their gender across the groups. In Group 1 (i.e. Figure 1), majority (5, 25.0%) of the 20 male respondents were aged between 35-39 years and 55-59 years; while most (6, 20.0%) of the 20 females are aged between 50-54 years; in Group 2 (i.e. Figure 2), majority (8, 40.0%) of the 20 male respondents were aged between 35-39 years; while most (6, 30.0%) of the 20 females are aged between 40-44 years; in Group 3 (i.e. Figure 3), majority (6, 30.0%) of the 20 male respondents were aged between 33-39 years; while most (6, 30.0%) of the 20 females are aged between 50-54 years; and in the Control Group (i.e. Figure 4), majority (5, 25.0%) of the 20 male respondents were aged between 35-39 years; while most (5, 25.0%) of the 20 females are aged between 55-59 years.
Hypotheses Testing

Average (Mean) Participants’ Blood Pressure (Systolic and Diastolic) across the Groups

150
140
130
120
110

Grp. Grp. 1 Grp. 2 Grp. 3

Pretest Posttest

Fig. 5: Average (Mean) Systolic Blood Pressure for Males

The figures above reveal that the systolic blood pressures at the posttest level were less than those at the pretest level for both males and females.

In order to test these hypotheses, paired - samples t-test was used, and the result obtained is shown in following tables.

Table 1: Paired-Samples t-Test of Difference in the Participants’ Systolic Blood Pressure Level across the four (4) Groups

<table>
<thead>
<tr>
<th>Systolic Blood Pressure</th>
<th>Male Subjects</th>
<th>Female Subjects</th>
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<tbody>
<tr>
<td></td>
<td>Experimental</td>
<td>Experimental</td>
</tr>
<tr>
<td></td>
<td>Group 1</td>
<td>Group 2</td>
</tr>
<tr>
<td></td>
<td>(N=20, df=19)</td>
<td>(N=20, df=19)</td>
</tr>
<tr>
<td>Mean</td>
<td>142.75</td>
<td>143.75</td>
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<tr>
<td>t-cal</td>
<td>144.00</td>
<td>144.00</td>
</tr>
<tr>
<td>(p-Value)</td>
<td>(0.57)</td>
<td>(0.80)</td>
</tr>
<tr>
<td>(S.E.)</td>
<td>(0.57)</td>
<td>(0.80)</td>
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Fig. 6: Average (Mean) Systolic Blood Pressure for Females

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
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<tbody>
<tr>
<td></td>
<td>(*0.00)</td>
<td>(*0.00)</td>
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<tr>
<td></td>
<td>(1.20)</td>
<td>(1.24)</td>
</tr>
<tr>
<td></td>
<td>(1.24)</td>
<td>(1.28)</td>
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<td></td>
<td>(0.93)</td>
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<td>(1.35)</td>
<td>(1.24)</td>
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<tr>
<td></td>
<td>(0.69)</td>
<td>(0.80)</td>
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<td></td>
<td>(1.56)</td>
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*Significant at $p \leq 0.05$; Enclosed in the brackets are the standard errors of the mean and the level of significance*

With respect to the illustrations given from the earlier graphical charts, the systolic blood pressure at the posttest level were less than those at the pretest level [**Male Subjects**- (Experimental Group1: 126.85 < 142.75, Experimental Group2: 126.65 < 143.75, Experimental Group3: 124.10 < 144.00, and Control Group: 139.55 < 142.25)]. The differences between these posttest and pretest systolic blood pressure were found to be statistically significant for the male subjects (Experimental Group1: $t_{cal.} =16.34$, $p$-value=0.00<0.05, Experimental Group2: $t_{cal.} =18.41$, $p$-value=0.00<0.05, Experimental Group3: $t_{cal.} =33.05$, $p$-value=0.00<0.05, and Control Group: $t_{cal.} =7.29$, $p$-value=0.00<0.05). In the same vein, the result for the females are as follows: [**Female Subjects** - (Experimental Group1: 126.85 < 146.00, Experimental Group2: 127.00 < 144.50, Experimental Group3: 124.10 < 144.00, and Control Group: 138.75 < 140.75)]. The differences between these pretest and posttest systolic blood pressure were found to be statistically significant for the female subjects (Experimental Group1: $t_{cal.} =61.75$, $p$-value=0.00<0.05, Experimental Group2: $t_{cal.} =23.16$, $p$-value=0.00<0.05, Experimental Group3: $t_{cal.} =33.05$, $p$-value=0.00<0.05, and Control Group: $t_{cal.} =7.65$, $p$-value=0.00<0.05).

The figures above reveal that the diastolic blood pressures at the posttest level were less than those at the pretest level for both males and females.

In order to test whether the observed differences in the average (mean) blood pressures were statistically significant, paired - samples $t$-test was used, and the result obtained is shown in the table below.
Table 2: Paired-Samples t-Test of Difference in the Participants’ Diastolic Blood Pressure Level across the four (4) Groups

<table>
<thead>
<tr>
<th></th>
<th>Male Subjects</th>
<th>Female Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Experimental</td>
<td>Experimental</td>
</tr>
<tr>
<td></td>
<td>Group 1</td>
<td>Group 2</td>
</tr>
<tr>
<td></td>
<td>(N=20, df=19)</td>
<td>(N=20, df=19)</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td>(Std Error)</td>
<td>(Std Error)</td>
</tr>
<tr>
<td></td>
<td>(p-value)</td>
<td>(p-value)</td>
</tr>
<tr>
<td>Pretest</td>
<td>99.75</td>
<td>97.90</td>
</tr>
<tr>
<td></td>
<td>(1.47)</td>
<td>(1.34)</td>
</tr>
<tr>
<td>Posttest</td>
<td>80.80</td>
<td>80.20</td>
</tr>
<tr>
<td></td>
<td>(*0.00)</td>
<td>(*0.00)</td>
</tr>
<tr>
<td></td>
<td>(0.30)</td>
<td>(0.38)</td>
</tr>
</tbody>
</table>

*Significant at p≤0.05; Enclosed in the brackets are the standard errors of the mean and the level of significance

With respect to the illustrations given from the earlier graphical charts, the diastolic blood pressure at the posttest level were also less than those at the pretest level [Male Subjects: (Experimental Group1: 80.80 < 99.75, Experimental Group2: 80.20 < 97.90, Experimental Group3: 78.50 < 96.75, and Control Group: 90.20 < 95.20). The differences between the posttest and pretest diastolic blood pressure were found to be statistically significant for the male subjects (Experimental Group1: t-cal. = 11.63, p-value=0.00<0.05, Experimental Group2: t-cal. = 14.48, p-value=0.00<0.05, Experimental Group3: t-cal. = 14.93, p-value=0.00<0.05, and Control Group: t-cal. = 4.45, p-value=0.00<0.05). Likewise, the result for the females are as follows: [Female Subjects: (Experimental Group1: 79.80 < 97.25, Experimental Group2: 80.15 < 97.00, Experimental Group3: 78.95 < 98.25, and Control Group: 88.10 < 91.95). The differences between the pretest and posttest diastolic blood pressure were found to be statistically significant for the female subjects (Experimental Group1: t-cal. = 15.32, p-value=0.00<0.05, Experimental Group2: t-cal. = 15.98, p-value=0.00<0.05, Experimental Group3: t-cal. = 14.40, p-value=0.00<0.05, and Control Group: t-cal. = 8.94, p-value=0.00<0.05).
Average (Mean) Participants' Psychological Attributes (Stress Control Ability and Anxiety) across the Groups

![Chart showing average stress control anxiety for males and females across pretest and posttest.](image)

**Fig. 9: Average (Mean) Stress Control Anxiety for Males**

**Fig. 10: Average (Mean) Stress Control Anxiety for Females**

The figures above reveal that the stress control ability at the posttest level were greater than those at the pretest level for both males and females.

In order to test whether the observed differences in the average (mean) psychological attributes were statistically significant, paired-samples t-test was used, and the result obtained is shown in the table below.

**Table 3: Paired-Samples t-Test of Difference in the Participants' Stress Control Ability across the four (4) Treatment groups**

<table>
<thead>
<tr>
<th></th>
<th>Male Subjects</th>
<th>Female Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stress Control Ability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Experimental Group 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=20, df=19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Experimental Group 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=20, df=19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Experimental Group 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=20, df=19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=20, df=19)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean</th>
<th>t-cal.</th>
<th>(p-value)</th>
<th>Mean</th>
<th>t-cal.</th>
<th>(p-value)</th>
<th>Mean</th>
<th>t-cal.</th>
<th>(p-value)</th>
<th>Mean</th>
<th>t-cal.</th>
<th>(p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Standard Error</td>
<td></td>
<td></td>
<td>Standard Error</td>
<td></td>
<td></td>
<td>Standard Error</td>
<td></td>
<td></td>
<td>Standard Error</td>
</tr>
<tr>
<td>Pretest</td>
<td>8.05</td>
<td>8.45</td>
<td>8.65</td>
<td>9.55</td>
<td>8.30</td>
<td>8.05</td>
<td>8.20</td>
<td>9.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.25</td>
<td>0.29</td>
<td>0.28</td>
<td>0.34</td>
<td>0.37</td>
<td>0.25</td>
<td>0.30</td>
<td>0.23</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
With respect to the illustrations given from the earlier graphical charts, the stress control ability at the posttest level were greater than those at the pretest level [**Male Subjects**- (Experimental Group1: 14.10 > 8.05, Experimental Group2: 14.20 > 8.45, Experimental Group3: 12.85 > 8.65, and Control Group: 9.90 > 9.55)]. For the male subjects, these differences between the pretest and posttest stress control ability were found to be statistically significant across the groups except for the Control Group (Experimental Group1: \( t_{-cal.} = 13.27, p\text{-value} = 0.00 < 0.05 \), Experimental Group2: \( t_{-cal.} = 12.55, p\text{-value} = 0.00 < 0.05 \), Experimental Group3: \( t_{-cal.} = 17.00, p\text{-value} = 0.00 < 0.05 \), and Control Group: \( t_{-cal.} = 1.44, p\text{-value} = 0.17 > 0.05 \)). The results for the females are as follows: [**Female Subjects** - (Experimental Group1: 13.60 > 8.30, Experimental Group2: 14.40 > 8.05, Experimental Group3: 12.45 > 8.20, and Control Group: 9.50 > 9.10)]. The differences between these stress control abilities were found to be statistically significant for the female subjects (Experimental Group1: \( t_{-cal.} = 13.32, p\text{-value} = 0.00 < 0.05 \), Experimental Group2: \( t_{-cal.} = 19.44, p\text{-value} = 0.00 < 0.05 \), Experimental Group3: \( t_{-cal.} = 14.17, p\text{-value} = 0.00 < 0.05 \), and Control Group: \( t_{-cal.} = 2.37, p\text{-value} = 0.03 < 0.05 \)).

The figures above reveal that the anxiety management at the posttest level were greater than those at the pretest level for both males and females.

In order to test whether the observed differences in the average (mean) psychological attributes were statistically significant, paired - samples \( t \)-test was used, and the result obtained is shown in the table below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(*0.00)</td>
<td>(*0.00)</td>
<td>(*0.00)</td>
<td>(0.17)</td>
<td>(*0.00)</td>
<td>(*0.00)</td>
<td>(*0.03)</td>
</tr>
<tr>
<td></td>
<td>(0.36)</td>
<td>(0.35)</td>
<td>(0.23)</td>
<td>(0.40)</td>
<td>(0.31)</td>
<td>(0.23)</td>
<td>(0.34)</td>
</tr>
</tbody>
</table>

*Significant at \( p \leq 0.05 \); Enclosed in the brackets are the standard errors of the mean and the level of significance.
Table 4: Paired-Samples t-Test of Difference in the Participants’ Anxiety Management across the four (4) Groups

<table>
<thead>
<tr>
<th>Anxiety Management</th>
<th>Male Subjects</th>
<th>Female Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Experimental Group 1</td>
<td>Experimental Group 2</td>
</tr>
<tr>
<td></td>
<td>(N=20, df=19)</td>
<td>(N=20, df=19)</td>
</tr>
<tr>
<td>Pretest</td>
<td>Mean: 8.70 (Std. Error: 0.13)</td>
<td>Mean: 8.90 (Std. Error: 0.20)</td>
</tr>
<tr>
<td>Posttest</td>
<td>Mean: 12.00 (Std. Error: 0.45)</td>
<td>Mean: 12.45 (Std. Error: 0.36)</td>
</tr>
<tr>
<td></td>
<td>t-cal. =7.47, p-value=0.00&lt;0.05</td>
<td>t-cal. =10.32, p-value=0.00&lt;0.05</td>
</tr>
</tbody>
</table>

*Significant at p≤0.05; Enclosed in the brackets are the standard errors of the mean and the level of significance*

With respect to the illustrations given from the earlier graphical charts, the anxiety management at the posttest level were greater than those at the pretest level [Male Subjects- (Experimental Group1: 12.00 > 8.70, Experimental Group2: 12.45 > 8.90, Experimental Group3: 12.60 > 10.00, and Control Group: 10.45 > 10.15)]. For the male subjects, these differences between the pretest and posttest ability management were found to be statistically significant across the groups except for the Control Group (Experimental Group1: t-cal. =7.47, p-value=0.00<0.05, Experimental Group2: t-cal. =10.32, p-value=0.00<0.05, Experimental Group3: t-cal. =14.17, p-value=0.00<0.05, and Control Group: t-cal. =1.83, p-value=0.02<0.05). The results for the females are as follows: [Female Subjects - (Experimental Group1: 12.05 > 9.30, Experimental Group2: 12.95 > 9.00, Experimental Group3: 12.65 > 9.85, and Control Group: 10.80 > 10.35)]. The differences between these anxiety management were found to be statistically significant for the female subjects (Experimental Group1: t-cal. =5.79, p-value=0.00<0.05, Experimental Group2: t-cal. =12.34, p-value=0.00<0.05, Experimental Group3: t-cal. =20.34, p-value=0.00<0.05, and Control Group: t-cal. =2.65, p-value=0.02<0.05).
The figures above reveal that the amounts of cholesterol at the posttest level were less than the amount at the pretest level for both males and females.

In order to test whether the observed differences in the average (mean) amount of cholesterol were statistically significant, paired-samples t-test was used, and the result obtained is shown in the table below.
Table 5: Paired-Samples $t$-Test of Difference in the Participants’ Cholesterol Level across the four (4) Treatment groups

<table>
<thead>
<tr>
<th></th>
<th>Experimental Group 1</th>
<th>Experimental Group 2</th>
<th>Experimental Group 3</th>
<th>Control Group 1</th>
<th>Experimental Group 2</th>
<th>Experimental Group 3</th>
<th>Control Group 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male Subjects</strong></td>
<td>(N=20, df=19)</td>
<td>(N=20, df=19)</td>
<td>(N=20, df=19)</td>
<td>(N=20, df=19)</td>
<td>(N=20, df=19)</td>
<td>(N=20, df=19)</td>
<td>(N=10, df=1)</td>
</tr>
<tr>
<td><strong>Pretest</strong></td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
</tr>
<tr>
<td></td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
</tr>
<tr>
<td></td>
<td>198.20 (2.56)</td>
<td>197.60 (2.19)</td>
<td>195.00 (2.76)</td>
<td>190.25 (2.86)</td>
<td>198.00 (1.67)</td>
<td>193.40 (3.30)</td>
<td>187.70 (3.40)</td>
</tr>
<tr>
<td></td>
<td>NS 0.00*</td>
<td>NS 0.00*</td>
<td>NS 0.00*</td>
<td>NS 0.00*</td>
<td>NS 0.00*</td>
<td>NS 0.00*</td>
<td></td>
</tr>
<tr>
<td><strong>Posttest</strong></td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
<td>Mean (Std. Error.)</td>
</tr>
<tr>
<td></td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
<td>t-cal. (p-value)</td>
</tr>
<tr>
<td></td>
<td>146.80 (2.51)</td>
<td>147.60 (2.19)</td>
<td>140.00 (2.76)</td>
<td>185.25 (2.86)</td>
<td>148.00 (1.67)</td>
<td>143.10 (3.24)</td>
<td>182.70 (3.40)</td>
</tr>
<tr>
<td></td>
<td>NS 0.00*</td>
<td>NS 0.00*</td>
<td>NS 0.00*</td>
<td>NS 0.00*</td>
<td>NS 0.00*</td>
<td>NS 0.00*</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at $p\leq0.05$; NS = No Statistic; Enclosed in the brackets are the standard errors of the mean and the level of significance

The table above reveals that for males and females, the amount of cholesterol at the posttest level were less than the amount at the pretest level [**Male Subjects**- (Experimental Group1: 146.80 < 198.20, Experimental Group2: 147.60 < 197.60, Experimental Group3: 140.00 < 195.00, and Control Group: 185.25 < 190.25)]. The difference between these posttest and pretest cholesterol level was found to be statistically significant for these male subjects only in experimental group 1 (Experimental Group1: $t$-cal. =66.83, $p$-value=0.00<0.05), but surprisingly there were no statistics computed for other groups because the standard error of the mean difference between the posttest and the pretest is 0 (i.e. zero) or approximate of 0 (zero).

The result for the female subjects [**Female Subjects**- (Experimental Group1: 148.00 < 198.00, Experimental Group2: 143.15 < 193.40, Experimental Group3: 139.30 < 194.30, and Control Group: 182.70 < 187.70)]. The difference between these posttest and pretest cholesterol level was found to be statistically significant for these male subjects only in experimental group 2 (Experimental Group2: $t$-cal. =285.77, $p$-value=0.00<0.05), but surprisingly there were no statistics computed for other groups because the standard error of the mean difference between the posttest and the pretest is 0 (i.e. zero) or approximate of 0 (zero).
Summary of the Research Findings

After carefully done analyses of the research, below is the summary of the findings in the research:

1. There is a statistical significant difference between the posttest and pretest systolic blood pressures for both males and females across the groups.
2. There is a statistical significant difference between the posttest and pretest diastolic blood pressures for both males and females across the groups.
3. For psychological attributes like stress control ability and anxiety management, the females experienced a statistical significant difference between the posttest and pretest levels across the groups; however, for the males, the statistical significant difference between the posttest and pretest levels was only found across the three experimental groups.
4. For amount of cholesterol, the statistical significant difference was only obtained for males in experimental group 1 and for females in experimental group 2. There were no statistics computed for other groups because the standard error of the mean difference between the posttest and the pretest is 0 (i.e. zero) or approximate of 0 (zero).

Discussion

The physiological therapies which the central focus was on physical activity level of participants have significant impact on the study variables. The differences between the posttest and pretest of both systolic and diastolic blood pressure were found to be statistically significant for the experimental groups compare with control group. Many forms of physical activity are healthy; it is pleasing to see that physical activity for health is now very high priority for governments and other agencies (Biddle & Mutrie, 2008). Professional Associations for Physical Activity (2010) reported that physical activity benefits many parts of the body – the heart, skeletal muscles, bones, blood (for example, cholesterol levels), the immune system and the nervous system – and can reduce many of the risk factors for NCDs (Non-communicable diseases). These risk factors include: reducing blood pressure, improving blood cholesterol levels and lowering body mass index (BMI).

Significant health benefits can be achieved from regular physical activity (McGuirk, 2012), the right amount of PA which is at least 30 minutes of moderate activity a day, 5 times a week, or 20 minutes of vigorous activity at least 3 days a week according to Gorin and Arnold (2006),
take a positive effect on mental and general health. Haskell et al (2007) also reported that a combination of moderate and vigorous PA in greater than 10 minute bouts produce health benefits. These bouts can lead to numerous overall health benefits, for example in fitness (Bouchard, Bear & Haskell, 2007). PA also participates in a reduction in blood pressure and bad cholesterol (Myers, 2003) as well as playing a role in preventing chronic diseases such as obesity, hypertension, cancer and diabetes (Warburton, Nicol & Bredin, 2006).

The result of the study also established significance difference in the second and third hypotheses. In view of this, psychological therapies and combination of physiological and psychological therapies would improve the health of average workers. In proffering suggestion to active health lifestyle, physiological and psychological techniques should be emphasized. The psychological techniques would also provide reinforcement for continuation when participants are experiencing lethargic factors. Biddle and Mutrie (2008) postulated that physical activity are placed within a wider framework of psychological, social, environmental and policy environments. Far from diminishing the role of psychological factors, it shows how important 'cognitive mediation' is in physical activity decision-making. For example, even when a workplace is well served with dedicated cycle routes and safe walking routes, creating an incentive system for people to cycle or walk to work still requires the development of beliefs and attitudes, as well as decision-making, choice, motivation and, ultimately, behavior on the part of the individual.

In the study of Hassmen et al (2000) on physical exercise and psychological well-being using adult participants in Finland, the results agree with the findings of this study as it indicates a consistent association between enhanced psychological well-being, as measured using a variety of psychological inventories, and regular physical exercise. They emphasized further that apart from physiological benefits associated with regularly performed physical exercise, a number of psychological benefits have also been established. These benefits include reduced depression, anxiety and anger, as well as generally improved mood. This study has established the fact that psychological consideration must be enshrined in a planned programme of physical activity.

**Conclusion**

The health and well-being of workers in any organization cannot be left unprioritized by management and workers themselves. Active and healthy workforces are guarantee of delivery and meeting the set vision and mission of an organization. In view of this, sedentary and all
categories of workers should be encouraged to adopt engaging in a balanced physical activity as a lifestyle. This study established that a combination of physiological and psychological therapies would foster healthy habit. Research in epidemiology reveals that a physically active lifestyle yields numerous health benefits. Evidence also shows that physical activity is associated with positive mental well being and reduced reactivity to cognitive stress.
References


