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Determinants of physical activity participation among university sport science students

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Abstract

The aim of this study was to identify the possible psychosocial and environmental factors that influence physical activity participation and to collect suggestions for increasing physical activity and reducing inactivity in a representative sample of college sport science students. The study was conducted through qualitative research design. By using a semi-structured questioning method, eight focus group discussions on 100 college sport science students aged 18-30 years (50 females, 50 males) was conducted on College premises. The data collected were analyzed in an inductive method. Study participants pointed out numerous barriers such as self-efficacy, enjoyment of physical activity, parental support/modeling, participation in sport teams, sport facilities, peer pressure, residency, busy class schedule, self-discipline, lack of time and skills to be significant correlates of physical activity participation. Sport Science professionals and researchers can use the information obtained from this study to plan and implement interventions, strategies and policies for encouraging engagement in physical activity and reducing sedentary activities. Future physical activity programs such as fulfilling sporting facilities in college premises, recruiting students based on their interest and sporting abilities, facilitating campus yoga practice, and encouraging student sporting races. These encourage the creation of effective and tailored action strategies to increase physical activity and reduce inactivity among sport science students.

Keywords: barriers, sport science, college students, physical activity

1. Introduction

Physical inactivity is perceived as a shared risk factor for many non-communicable diseases such as cardiovascular diseases, breast cancer, colon cancer, and type II diabetes ^[1]. For most countries worldwide, the occurrence of non-communicable diseases has reached widespread levels and has become the leading cause of death among adults. Internationally, physical inactivity constitutes 6% of the risk of coronary heart disease, 7% of type II diabetes, 10% of breast cancer and 10% of colon cancer ^[2]. All these non-communicable diseases are considered a major public health issue and are linked to an unhealthy lifestyle such as poor diet, smoking and alcohol intake, in addition to physical inactivity and sedentary behavior. With the tremendous increase in obesity across the world, tackling the issue of obesity at various stages of life is predominantly important to human being. Sport Science students who attend higher education may also be vulnerable to this disease of obesity when obesity is considered to be increased among adolescents. There is significant evidence that frequent involvement in physical activity protects against unnecessary weight gain while sedentary lifestyles and passive entertainment such as watching television, movies, and music, using computers, Facebook, and the internet encourage weight gain among adolescents. Although the recognized benefits of physical activity are well understood, regular engagement in physical activity among university-aged sports science students is declining ^[3].

Both physical activity and sedentary behavior affect students' weight and overall health ^[4]. A large body of literature points out that higher level of physical activity is associated with lower health risks such as overweight and obesity-related diseases ^[5]. There is also increasing evidence that excessive involvement in sedentary behaviors such as watching TV, using computers and sitting for work/study purposes for a long period of time is associated with an increased risk of obesity, diabetes, cancer, hypertension, independent of diet and physical

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activity behavior [6, 7, 8]. Because of the use of the internet as a typical sedentary practice for social interactions, the study indicates that higher levels of sedentary behavior are associated with indicators of poorer well-being, increased risk of depression, obesity, hypertension, cancer, diabetes and reduced cognitive functioning [8]. Studies have shown that a decrease in physical inactivity could reduce the disease encumbrance due to major non-communicable diseases by 6 to 10 % and increase the world population's life expectancy by 0.68 year. Furthermore, engaging in daily physical activity has a protective effect against the onset of several non-communicable diseases like cardiovascular disease, cancer and type II diabetes [9]. Previous research showed that physical inactivity is a major financial impact, accounting for 1.5 to 3% of the overall actual costs of health care in developed countries [10]. It is estimated, according to the previous study survey, that about one-fifth of the world's population is considered physically inactive and becomes a sedentary way of life [11]. Promoting physical activity among adolescents and young adults is a smart strategy that is likely to help lower the levels of physical inactivity and the associated encumbrance of disease in future generations. Similarly, previous studies have shown a decrease in the level of physical activity among young adults of university sports science students [12]. Engagement in physical activity is a personal preference but the amount of physical activity a person exercise is often influenced by various factors. Although personal influences play a significant role, physical activity is also affected by overlooked social, university features and environmental factors [13]. Ecological models may be especially useful in the analysis of perceived barriers to physical activity because, although they consider the personal, they emphasize the role of the environment and the interaction of these influences. Through an ecological viewpoint, the contributing factors affecting student's physical activity participation could be better identified and understood, interventions could be more efficiently planned and those obstacles can be addressed to improve physical activity and decrease inactivity among sport science professionals.

There is limited proof of physical activity level among young adults studying sports science at university. However, identifying barriers to physical activity participation in this population including attitudes, knowledge and skill about physical activity is essential in order to establish successful evidence-based interventions. Qualitative research would likely provide an in-depth insight into individuals' experiences and perceptions of the motivations and obstacles to involvement in sport and physical activity in this group of populations [14]. Sport science undergraduate students are a group of young adults who are considered to have knowledge of physical activity and associated health benefits and significant advocates and promoters of physical activity in one's life to enhance overall health. Currently, no reported evidence relating to determinants of physical activity in sport science students' practice of physical activity and personal experience, especially in terms of their motives and barriers to taking part in physical activity. Generally, research among university sport science student is required to better understand the behavior of energy expenditure to establish successful strategies to increase physical activity and reduce sedentary time [8]. Thus, the aim of this study was to explore perceived barriers to participation in physical activity and to collect suggestions

to promote creation of tailored training programs aimed at increasing physical activity involvement and decreasing sedentary behaviors among sport science university graduates.

2. Material and Method

2.1 Study Subjects and Recruitment

Focus group discussions for this qualitative research study were used for data collection. University Sport Science students aged 18-30 were recruited from three colleges of Oromia state, Ethiopia, to take part in the focus group discussion exploring determinants to physical activity and sedentary behavior. For eligibility requirements, participants were expected to give informed consent and self-identity as scholars of the day. All the participants were of Ethiopian nationality and have been enrolled in several sport science courses full-time. Students from the university's second and third years were recruited using snowball sampling to make sure ample diversity of opinion. Potential participants were approached/invited by face-to-face, messages, by telephone or by email and those attending it; were part of the discussion. The focus group discussion was conducted within the university premises during university time. Hundred (n = 100) participants attended eight focus groups. The aim was to recruit the focus groups ranged in size between ten and fourteen participants per focus group [15] with an average of 12 - 13 participants per session. The focus group discussion lasted about 40 - 60 minutes. Because of their 'limited' background as a university student, students in their first year were not included in focus group discussion.

2.2 Data Collection Procedure

The focus group discussions were conducted until scientific suggestion was introduced since the sample size can never be decided in qualitative research [15]. The investigator conducted one more focus group discussions to ensure that all scientific knowledge and thoughts are incorporated. All the focus group discussions were held in a conference room with an elliptical table in Dilla University Department of Sport Science at a time and date convenient for the participants and the researcher. All the study participants were asked to complete a short questionnaire such as age, sex, height; weight and perceived health, before beginning focus group discussions. The focus group discussion was conducted by trained and prepared mediators who participated in workshops organized and guided by experienced focus group researchers. They took notes on the observations and suggestions that the focus group discussion members had expressed. Every focus group discussion started with an introductory session in which the researcher and the participants both introduced themselves and received information on study aims and data security. A set of semi-structured interview guide with open-ended questions were developed to facilitate open discussion of participants' perceptions of obstacles to physical activity participation. The questions only serve as a guide, and the participants were not asked in a specific order. A written description of key points and an important audio version of the discussion were collected at the end of the discussion. Audio files were carefully and completely recorded and each participant of the focus group discussion was given a code (P1, P2, P3, etc.) to guarantee confidentiality. During focus group discussions drinks and nibbles were offered to

the participants. Lastly, all participants received a lunch coupon and a gif card for participating.

2.3 Question Development

This study focused on conceptual areas like personal, social, and environmental and university features barriers to physical activity participation. Potential questions were developed for the discussion guides on physical activity. The questions were chosen and logically organized, with

follow-up probes if it is necessary.

2.4 Data Analysis

The qualitative content analysis was carried out using the thematic inductive method. The ways of analyzing qualitative data are shown in Figure 1. The focus group discussions were written down precisely word by word. Next, several text codes were created and grouped into four main groups. Quotes were also listed for clarification and verification of each of the key groups.



Fig 1: Procedure of Data Analysis

3. Results

Table 1: Characteristics of Focus Group Participants (Mean \pm SD, %, n = 100)

Variables		N	%
Gender:	Male	50	50
	Female	50	50
Marital Status : Single		100	100
Study program: Regular		100	100
Educational level: Undergraduate		100	100
BMI(kg/m ²):	Male	20.01 \pm 4.42	
	Female	20.53 \pm 4.86	
Age (years):		22.01 \pm 2.38	

3.1 Perceived barriers to physical activity participation

This section included the participants' responses to questions about barriers to regular physical activity participation. Four key groups such as personal, social, environmental, and university feature were developed in response to semi-structured open-ended written questionnaires of the

qualitative data about barriers to involvement in physical activity. These groups addressed the various dimensions of the socio-ecological framework. Brief list of explanations given by the study participants in responses to open-ended questions are summarized in Table 2.

Table 2: Perceived barriers to engagement in physical activity

Barriers	Short list/explanations of physical activity barriers
Personal	Lack of energy, Stress and Anxiety, Lack of Time, Lack of Skills, Boredom, Lack of Self-Discipline, Lack of Self-Efficacy, Laziness, enjoyment of PA
Social	Parental Support and Motivation, Lack of Parental Modeling, Gender Typing, Peer Pressure, Verbal Intimidation, cultural influence
Environmental	Safety problem, Lack of Opportunities, Financial problem, influence of technology (Internet, FB), Lack of Sport Facilities, participation in sports teams
University features	Residency, Examinations, busy class schedule

Participants were aware of the need to participate in physical activity and exercise in all the focus group discussions, but were unable to do physical activity due to

many obstacles. Among these several barriers, personal and social barriers have been identified more often than environmental and university feature barriers (Figure 2).

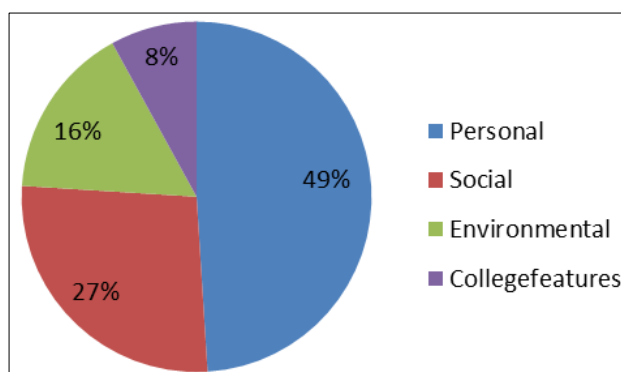


Fig 2: Distribution of subjects based on physical activity barriers

3.2 Personal barrier descriptions

3.2.1 Lack of energy

There's little energy left for physical activity after a long working day and traveling time from class to residence and food provided to sportsmen lack nutritional value. "It takes a lot of time to travel from residence to lecture for academic work and this takes a lot of my energy." (P25, Male, Bachelor Student, 22 years)

3.2.2 Stress and Anxiety

Factors such as academic responsibilities, academic achievement competitions, social pressure (peers, parents, and teachers) and relationships created stress and anxiety in the study participants that influenced their involvement in physical activity.

3.2.3 Lack of Time

The students spent most of their time in front of the computer (studying), due to an increased academic workload. Participants stated that a busy academic schedule and other responsibilities and interests make it extremely difficult to carry out physical activity and exercise. "Due to a busy class schedule, assignments, study and other activities such as family support after college hours, no time for physical activity (P35, Male, Bachelor Student, 21 years). Some students living in student residence mentioned that their ability to initiate or sustain some sports or other physical activity was limited by traveling and increased academic workload. "We started doing physical activity for a short period of time in the morning and then stopped. When we are running and walking back, it's 8.00 A.M. We need to go to classes at 8.30 A.M. There is not much time". (P45: Male, Bachelor Student, 22 years)

3.2.4 Lack of Performance/Skills

The participants expressed that they joined the Sports Science department without the skill or performance examination for physical activity. Many students highlighted the idea that 'Before I entered university, I had no experience in daily physical activity. I'm not interested in sports or day-to-day physical activity. I don't like sport whatsoever as my perceived fun. I only join the sport science department without the skills and interest in physical activity."

3.2.5 Boredom

The participants indicated being ready or able to do physical activity if it could be made interesting and all the necessary sports facilities were fulfilled. "I don't want to exercise because it is so boring." (P14, Female, Bachelor Student, 20 years)

3.2.6 Lack of Self-Discipline

Participants' indicate that disciplinary behavior is still one of the major challenges facing university students in the field of sports science. "My personal irregularity limits my participation in daily physical activity. I am not genuine and regular in doing physical activity." (P5, Male, Bachelor Student, 19 years)

3.2.7 Lack of Self-Efficacy

Low self-efficacy for some study participants had caused them not to engage in sport and physical activity. When the self-efficacy of a person towards something is weak, there is

no chance of succeeding. "When I was young I tried to perform physical activity and sport but I am not good at it. We don't succeed because we're not good at something and you get rid of it. After all, I didn't want to get involved in the sport because I don't have the desire to do so." (P18: Female, Bachelor Student 25 years)

3.2.8 Laziness

Most of the participants indicated that they were simply too lazy to pursue physical activity. "No difficulty getting involved in physical activity. I can't get up early in the morning, because I'm too lazy:" (P34, Female, Bachelor Student, 18 years)

3.2.9 Social Barrier Descriptions

Participants in this specific focus group discussion mentioned that lack of support and motivation/encouragement from friends and family considered a major obstacle for the study participants to participate in physical activity and exercise.

3.2.10 Cultural

Cultural barriers have influenced physical activity in certain religions, such as in Islam and particularly in women not being encouraged after a certain age to take part in physical activity and sports. The dressing patterns (styles) for women adherents of the Islamic religion are quite different from the other study participant group. Many females expressed that their perception of physical activity and sports changed with time, 'females are being less active and males being more active and playful'. "Depending on gender physical activity varies. Girls become less engaged in regular physical activity." (P32: Female, Bachelor Student, 23 years)

3.2.11 Family Discouragement

One of the key reasons for the lack of parental support listed by the subjects was that parents prioritize academic achievement over physical activity. For example; one participant mentioned that if she tried to get up early in the morning for physical activity, the response from her parents was; "You don't have to get up early in the morning and if you want to wake up, then you'll study better at that time." (P50, Female, Bachelor Student, 20 years) Similarly, one of the respondents shared an idea and also remembered an occasion in which she wanted to participate in physical activity; her parents responded; Do your university work first, and then do housework. "(P28, Female, Bachelor Student, 26 years)

3.2.12 Lack of Parental Modeling

Participants in this focus group discussion have identified the absence of parental modeling as a significant barrier to physically inactive. "When our parents do yoga exercise, we may be more inspired to do it with them. When our parents get up for physical activity early in the morning, we can do exercise with them but they aren't" (P40, Female, Bachelor Student, 19 years)

3.2.13 Gender Typing

Parental understanding of gender often leads them to encourage boys to take part more than girls in physical activity. According to Ethiopian culture, women are responsible to do household chores. A similar experience was shared or reported by female respondents across the

entire focus groups. "When I get time; parents tell me to do household work such as cleaning, washing the dish, etc." (P46, Female, Bachelor Student, 22 years)

3.2.14 Peer Pressure

The participants in this particular study mentioned the discouragement they faced from their peer group. For example, one participant cited: "They said exercise isn't necessary, just take rest, and cool" (P24, Female, Bachelor Student, 24 years). Many females during the activity expressed the need to have a partner or a friend of the same gender. Female students are afraid to just go into the area of physical activity. "When I become alone, I am not interested in doing physical activity and going to play area. I won't do physical exercise if I'm alone". (P2: Female, Bachelor Student, 22 years)

3.2.15 Verbal Intimidation

Some participants reported that at a time of participation in physical activity, there are disappointments and incidents of being forwarded to women for mistreatment. "I don't like doing physical activity and sport at the sports fields, because there are so many unethical joker boys who threaten female students. Women in student dormitory don't really want to see girls playing and performing physical exercise in the field" (P44, Female, Bachelor Student, 27 years). Similarly another overweight male respondent reported that the onlookers would offer strange expression whenever he went out for physical activity/exercise and looked as if he was an alien.

3.2.16 Motivation

Support and encouragement to engage in sporting activity during childhood seem to have played an important role in maintaining the students' physical activity and sports actions into adult life. For example, one participant cited: "During my primary and secondary education, I was not much involved in physical activity. That may also be a reason for not being involved right now. It could be the mindset of my education and the world I was in at the time" (P38: Female, Bachelor Student, 24 years). It is also expressed that "we are sport science professions and an athletic trainer after graduation, we can't tell anyone to take part in physical activity without active participation in physical activity by ourselves" (P7: Male, Bachelor Student, 23 years)

3.2.17 Environmental barrier descriptions

Participants in the focus group's discussion also mentioned environmental and neighborhood dimensions as further barriers to physical activity along with personal and social barriers.

3.2.18 Safety Matter

Most female participants shared their anxiety and the concern of their parents concerning safety and potential risk of harm if they went to physical activity and exercise. Most of the young women in the focus groups discussed safety issues in their surroundings, for example, being afraid to go out in the morning and after dark as a barrier to exercising or being more physically active outdoors. For example, one participant mentioned: "If you go out for a walk, parents do not allow us for fear of crime." (P10, Female, Bachelor student, 21 years)

3.2.19 Financial

Another environmental obstacle that was evident in the participants was the cost of physical activity and exercise programs. The expense concerns were focused on commercial gyms and wellness/fitness centers and high membership and class rates. For example, one participant mentioned: "Gymnasium is in university premises but we have to pay 500 ETB for membership." (P42, Female, Bachelor student, 19 years)

3.2.20 Internet and Technology

Excessive use of technology such as television watching, computer use, Facebook, use of the internet and cell phone has been considered a major perceived environmental barrier among the subjects of the study. Many of the students in this focus group discussion claimed that they spent most of their time on television watching, Facebook, the internet, phone, or computer on a regular basis contributing to insufficient physical activity. For example, one participant mentioned "we have time but we are more interested in social media like WhatsApp, Facebook, internet and TV." (P48, Female, Bachelor student, 18 years)

3.2.21 Lack of Sport Facilities

Participants mentioned that the availability/accessibility of sporting facilities within the university compound plays a significant role in encouraging students to engage in regular physical activity and decrease sedentary behavior. When the accessibility of sports facilities within the university is restricted, many participants preferred to stay in the residences and spend considerable time in online gaming, watching you tube videos, downloading music, and social networking sites such as Facebook, Instagram, etc. For example, one participant stated: "We don't have a well-constructed sports fields and gymnasium in our surroundings and in university premises." (P22, Female, Bachelor student, 23 years). The students also cited the lack of yoga classes at the university premises. For example, one participant mentioned, "We used to have group yoga classes at school earlier now it's not there at college level" (P8, Female, Bachelor student, 24 years). For example, one participant mentioned: "There is a shortage of sporting facilities such as gymnasium within university premises due to this the number of students going to take part in physical activity has decreased. We just forced to play carom" (P33, Male, Bachelor student, 24 years). Another participant mentioned: "There are no washing facilities (bathroom), there are no measuring instruments for physical activity, and there are no conditioning and aerobics exercises there." (P3, Male, Bachelor student, 25 years)

3.2.22 University feature barrier descriptions

Several features of the student within the university premise such as residency, examinations, busy class schedule, etc. seemed to be temperate the interactions between perceived barriers and physical activity. Students resided at the university campus do not have a chance of using cycle as a means of transportation. "We sleep in the dormitory. We all spent much time watching television and at the beginning of the primary year at university lifestyle we only had an eye for the "fun" student life and thus, I ignored my exercise." (P41, Male, Bachelor student, 26 years)

4. Discussion

Physical activity is considered to be one of the vital health promotion activities that enhance overall health, physical, mental and social prominence and performance. The purpose of this explorative study was to identify perceived barriers of physical activity participation in College sport science students. Moreover, the investigator collected opinions and suggestions in order to facilitate the development of tailored intervention programs targeting to increase physical activity and decrease inactivity in university sport science students. Analogous to Story's framework ^[16] by combining Bandura's Social Cognitive Theory ^[17] with Sallis' ecological model ^[18] that explaining about health behavior, numbers of perceived barriers have been identified as potential barriers to physical activity participation among sport science students. The barriers can be classified in to personal, social, environmental and university features.

4.1 University Features Barriers

Several features of the student within the university premise such as residency, examinations, busy class schedule, etc. seemed to be temperate the interactions between perceived barriers and physical activity. Students spend most of their time on sedentary activities such as watching TV, Facebook, using the Internet, using computers, watching movies, etc. For example, living in a student dormitory may affect the relationship between modeling and physical activity and sedentary behavior of the participants. Students may experience fewer parental modeling but more peer modeling when they reside away from home and vice versa.

4.2 Environmental Barriers

There has been extensive study with regard to the issue of safety concerns ^[19, 20] with respect to different physical activity realms. This is also consistent with present findings as well as another study in which women perceived the environment and neighborhood as unsafe compared to men and were less likely to perceive easy access and availability to physical activity areas ^[21]. These findings were contrasted with a cross-sectional study carried out in South Carolina of 1,655 older adolescent girls that had no effect on self-reported physical activity from perceived environmental and neighborhood safety ^[22]. The present study showed analogous results with previously reported research findings that suggested internet use ^[23] and television watching ^[24] is closely linked to low participation in physical activity among university sports science students. Bolivar and colleagues ^[25] carried out a cross-sectional analysis aimed at examining the impact of environmental influences on physical activity and sedentary behaviour. Likewise, ^[26] found that lack of facilities is another commonly identified barrier to engagement in physical activity among young adults of university sport science students. Moreover, it is also reported that closer proximity and higher density of physical activity and exercise facilities were significantly linked to increased exercise frequency after control of individual characteristics ^[27]. An environmental mediation intended to reduce barriers to physical activity, including increasing the availability of physical activity-related equipment and facilities, revealed statistically significant positive changes within intervention community in overall fitness measures ^[28]. Thus, it is evident that improving physical activity facilities and environmental-related factors

are important to encourage physical activity and reduce sedentary behavior among young adults of sport science professionals. Similar to previous work on determinants of physical activity ^[29], the present study revealed that university sports science students are subject to a lack of money being paid to engage in daily physical activity and sports.

4.3 Social Barriers

Parental gender-typing, plays a significant role in the habits that boys and girls perceive physical activity can be quite different. Due to this girls were looking for more parental support for regular physical activity participation but boys perceive more parental encouragement to participate in regular physical activity ^[30]. Even though literature at the personal level of the focus group in US college students discussed only friends' social support to influence physical activity engagement ^[29, 31], the present study demonstrated that the social environment influencing the students' physical activity and sedentary behavior also included parental control, modeling and peer pressure. The assumption that previous studies did not find parental influences on the students' physical activity behaviors could be explained by the longer distances from home to college, resulting in less parental influences for college students to reside away from home.

4.4 Personal Barriers

Numerous psychosocial processes such as perceived pleasure, self-discipline and time management have been found to simultaneously influence physical activity. Additionally, when students become more physically active for some part of the day, they are physically exhausted, which makes them sedentary for the rest of the day. Although relaxation was the main reason for becoming physically active, the present study participants sense they needed to participate in sedentary activities (watching TV) to calm their minds. This indicates college sport science students still choose sedentary over physical activities in terms of relaxation and recreation.

As described in Keating's review ^[4], personal enjoyment was explained thoroughly as one of the main reasons for engaging in physical activity among university sports science students. With respect to time management, previous studies using focus group discussions showed that students believed and demonstrated that they lack the opportunity to be physically involved ^[29, 31, 32]. Sports science college students spend more time on academic-related sedentary practices such as sitting in a classroom for a lecture, sitting in a library for reading and assignment purposes and sitting in front of their computer for academic purposes, making it very difficult to be physically active ^[29, 32]. The findings of this study confirm that perceived lack of time is a well-known barrier for university students to engage in physical activity, especially among young adults in the field of sports science, because of educational commitments ^[33]. Previous studies ^[19, 34, 35] supported the current research findings. Moreover, Fox and colleagues ^[35] conducted a survey study on 300 adults of 18 and above years. It was found that 45% of the study subjects were perceived prolonged tiredness or lack of energy as the potential barriers for participation in physical activity among university students in addition to physical pain (34.5%), time constraints (30%) and tediousness (30%).

The previous research study highlighted that most South Asians are physically inactive, particularly during their leisure time^[36]. The findings of this research also support these findings, but it is particularly alarming as the current study subjects may be considered sport science practitioners and expected to be physically active, as they regularly discuss the importance of physical activity in their academic curriculum. Accordingly, the current findings show a significant difference between the knowledge and physical activity practice in this group of young-adults of sports science professional students. Lack of self-discipline is also one of the barriers faced by university sport science students similar to previously reported research^[37]. Absence of personal motivation and idleness has been recognized as a significant obstacle to various forms of physical activity involvement among university sports science students^[38]. Moreover, results from different studies^[19, 33, 34, 39] also confirmed that lack of time was the most repeatedly stated barrier to physical activity engagement among university sport science students.

The present study's findings support LaCaille's^[31] recommendation to improve the students' self-regulation skills such as self-efficacy, self-discipline and time management about regular physical activity participation during shift to university level. Research of McArthur and his colleagues^[40] have found out that self-management strategies among university students are closely linked to the degree of physical activity. Previous longitudinal research on college students revealed that a 30 minute short period of specific personality interviews, such as discussing perceived benefits and obstacles to physical activity participation, personal feedback, goal setting and strategies to improve physical activity levels, resulted in an increase in moderate and vigorous physical activity levels after one month^[41]. Moreover, Bond and colleagues^[42] indicated that encouraging small physical activity breaks after excessive sedentary time through a smartphone application increased physical activity and decreased sedentary activity time in overweight and obese individuals. The present study's finding was consistent with the study^[22] which reported a linear relationship between self-efficacy and physical activity. There is a confirmed association between higher levels of self-efficacy and involvement in more physical activity. Those with high self-efficacy to exercise, better intentions to be active and an activity plan were twice as likely to follow the recommended levels of physical activity^[43]. Data from some studies supports the assumption that incorporation of self-efficacy theory into the design of physical activity and an exercise intervention is necessary^[44].

5. Conclusion

The most important finding from the present study is the significant negative attitude towards physical activity and sports expressed by the study participants. This negative attitude emerged from the beginning of life due to the lack of support and encouragement of their parents and teachers for physical activity and sport received during primary and secondary education. The current study results clearly indicate that when developing strategies to promote physical activity among college sport science students, psychosocial systems need to be carefully taken in to consideration. The socio-ecological model helps us to identify opportunities for promoting physical activity by identifying factors that can

affect one's motivation to be physically active enough, such as personal, behavioral, social and physical environment and university characteristics. Hence, it is necessary to use detailed intervention models that address multiple factors when organizing physical activity promotion initiatives in the present population.

6. Recommendations for physical activity interventions

Participants suggested that the university administrators should fulfill a range of campus sports facilities. The students also suggested that instructors of sports science should pay attention to physical activity training and encourage the students to regularly attend sports training program. Students proposed that all students of sports science could join the sports science department based on their physical activity test related to their skill/performance. One student came up with the idea of organizing a sports day for all sports science university students giving them a chance to get to know the different sports system and apply to one of the different sports activities. Furthermore, students proposed that different sport competitions should be organized weekly among bachelor's students in sport science, encouraging them to do physical activity. Other students suggested that some 'physical activity and sports time' could be included as part of the curricula: "One could include compulsory sport activities in the students' schedules in each semester. These encouraged students to engage in exercises and physical activity. It also helps you to get to know your classmates so that social cohesion is also strengthened." Participants suggested that the use of bicycles for the purposes of active transportation should be encouraged among sport science students. The students also proposed that yoga practice within the campus should be facilitated and students encouraged participating. Participants also proposed that integrating 'physical activity/fitness program time' as part of their class schedule to combat time constraints. Different intramural sport competitions must be encouraged by university administration that organized by students of sport science. With regard to sedentary behavior, students assumed that "by making sporting activities easier to access/use and more fun, by improving perceived enjoyment of physical activity and sport, students would spend less time on couch, internet, Facebook, computer use, watching movies and watching television. Sport science policies within the university set up need to be revised to encourage physical activity and decrease sedentary behavior. Lastly, study participants suggested that those traditional sporting events (wrestling and archery) and minor games (racket and table tennis) should be encouraged.

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