

## Disparity and Perceived Barriers to participating in Physical Activity among Begemidir College of Teachers Education Students in Ethiopia

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### Abstract

**Objective:** This study aimed to investigate the disparity and perceived barriers to participating in Physical Activity among Begemidir College of teachers' education students in Gondar, Ethiopia. **Method:** A cross-sectional survey design was conducted among 201 college students in north Ethiopia. A proportionate stratified random sampling technique was employed. The perceived disparity of internal and external barriers to physical activity was compared across the gender of students while perceived barriers were evaluated by using a list of 14 items that inhibit individuals from participating in physical activity. **Results:** The results of this study reveal that the most frequently cited internal barriers for PA were lack of motivation (84%) while lack of time (78%) were reported external barriers. There were statistically significant differences in mean scores across departments of college students' physical activity levels. Moreover, the cross-department disparity was observed in both internal and external barriers ( $p < 0.002$ ). **Conclusions:** Understanding the perceived barriers to physical activity will help policymakers and healthcare promoters to design and implement a comprehensive and cost-effective physical fitness program for college students to achieve the minimum weekly physical activity recommended level by the American College of Sports Medicine (ACSM) so that efficient health can be promoted.

**Keywords:** 1. College students; 2. Extrinsic factors; 3. Intrinsic factors; 4. Perceived barriers; 5. Physical Activity

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### Introduction

Participating in physical activities continuously is very important to maintain health and prevent musculoskeletal diseases, such as spinal pain, neck pain, and shoulder pain (Koski et al., 2022). Physical activity also reduces the risk of coronary heart disease, high blood pressure, diabetes, osteoporosis, obesity, and colon cancer (Petraakaki & Karakasidou, 2017). Therefore, increasing participation in regular physical activity has been a public health priority in several developed countries like America and Europe (Bull et al., 2020). Considering the benefits of physical activity for health promotion and disease prevention, the American College of Sports Medicine (ACSM) guidelines (Ioanna Konstantinos Tsamita et al., 2015) recommend accumulating 30 minutes or more of moderate-intensity physical activity on most, preferably all days of the week. However, including vigorous-intensity exercises in daily regimens are likely to produce greater health benefits (Clemente et al., 2016). Adults who failed to meet this guideline are categorized as having physically inactive or sedentary lifestyles.

Previous research revealed that college students' physical activity levels have currently been declining (Towne et al., 2017). However, many people worldwide do not maintain adequate levels of physical activity. Furthermore, (Bednarek et al., 2016) reported that the barriers to taking part in physical activity

were low in developed countries compared to developing countries. Therefore, identifying and informing the barriers to physical inactivity has become a big concern for the world's population, including low-resourced countries such as Ethiopia (Kassa & Grace, 2018).

Previously, a lot of research has been conducted in many high-resourced countries to reveal the perceived barriers to taking part in physical activity (Freeman et al., 2020; Castillo-Paredes et al., 2021; Koski et al., 2022). However, such information is scarce in low-resourced countries particularly such as Ethiopia. Consequently, it is expected to provide the latest knowledge and understanding of physical activity preferences, levels, and perceived barriers. Secondly, college students are yet to spend more time being sedentary because of the fast technological expansion of the present times. This is verified by playing mobile games, social media, and the likes instead of taking part in physical activity. Thirdly, the researcher considers the benefit of participating in physical activity for college students in the development of physical, mental and social. Fourth, based on the researcher's 13 years of teaching experience at higher institutions and college levels, we thought that many of the students do not participate in physical activity apparently for various unknown reasons. Lastly, to the best of the researcher's thought, no prior research has yet been carried out to investigate the physical activities preferences, levels and perceived barriers among Ethiopian college of Teachers' Education in general and especially in Begemidir College of Teachers' Education. Therefore, this study aimed to investigate Perceived barriers and Disparities to participating in Physical Activity among Begemidir College of Teachers Education Students in Gondar, Ethiopia.

### Materials and Methods

The study employed a cross-sectional survey design to identify the current conditions and immediate solutions of a phenomenon (identifying and describing students' physical activity preferences, classifying their levels of physical activity and perceived barriers to exercise). To attain the objectives of this study, primary data were collected from college students about their physical activity preferences, levels, and perceived barriers through a questionnaire.

### Sampling technique and Sample Size

A total of 407 students were registered at Begemidir College of Teacher Education (BCTE) in the academic year of 2021-2022 E.C. Employing proportionate sampling technique, a total of 201 students were drawn from 6 departments such as language, education, mathematics, natural science, social science, aesthetics, and physical education. Then the participants of the study were randomly selected from each department until the representative proportional number is obtained. This sampling method was preferred because every member of different strata will get an appropriate and equal chance to select; a more precise sample representative can be obtained; can be employed for both proportions and stratification sampling and the sample represents the desired strata to achieve its objectives. The sample size was calculated by using Slovin's (1960) formula

$$n = \frac{N}{1 + Ne^2}$$

Where:

n= Number of samples

N = Total population and

e= Error tolerance which is 0.05

Substituting the values  $N = 407$  and  $e = 0.05$  in the above formula, the required sample size becomes  $n = 201$ . This translated to 49.4% of the target population. To get representatives in each department, each subtotal is multiplied by the ratio  $\frac{n}{N} = 0.49$ .

**Data Gathering Instruments**

A standardized questionnaire was utilized to collect data on students’ physical activity preferences, levels, and perceived barriers from 20 November 2021 to 10 March 2022. It was adopted from the original Physical Activity Perceived Barriers Scale (PAPBS) (Ioanna Konstantinos Tsamita et al., 2015)and; International Physical Activity Guidelines (IPAG)(Sisay, 2021).

**Data Analysis**

For data analysis, descriptive statistics such as frequency tables, and percentages were utilized to analyze the demographic characteristics of the respondents. To analyze the data sets on the main items, Statistical Package for Social Sciences (SPSS.v26, U.S.A) was used. The confidence interval was set at 95% with a significance threshold level of 0.05. The total score for the internal and external barriers was calculated to indicate the differences. The data were tabulated, analyzed, and interpreted using tables and percentages. Inferential statistics (mean=M, standard deviation=, and independent t-test=t) were employed to find whether there are statistically significant differences between the internal and external perceived barriers.

**Results**

**Demographic Characteristics of Participants**

The detailed characteristics of the participants were presented in (Table 1). Out of 201 study participants, 108 (53.7%) were males. It was observed that most study participants (n=184, 91.5%) were in the age range of 20 to 30 years. Furthermore, the majority of the students (n=171, 85.1%) had normal body mass indexes. However, a few students were underweight (n=23, 11.4%) and overweight (n=7, 3.5%). No college students had obesity. All the students (N = 201) responded to all of the questions, with no missing values.

**Table 1. Demographic characteristics of the participants (n=201)**

	Variables	N	%
<b>Gender</b>	Male	108	53.7
	Female	93	46.3
	Total	201	100.0
<b>Age groups (Years)</b>	Below 20	0	0
	21 to 30	184	91.5
	greater than 30	17	8.5
	Total	201	100.0
<b>Body Mass Index Category (kg/m<sup>2</sup>)</b>	underweight (<18.5kg/m <sup>2</sup> )	23	11.4
	Normal (18.50- 24.99 kg/m <sup>2</sup> )	171	85.1
	Overweight (25.00-29.99 kg/m <sup>2</sup> )	7	3.5
	Obese (≥ 30.00 kg/m <sup>2</sup> )	0	0
	Total		

Abbreviations:-N= Number, %= valid percent

**Barriers to taking part in physical activity among college students**

To answer this research question, descriptive statistics (frequency and percentage) for each item of the questionnaire instrument that measured internal and external perceived barriers to performing physical activity in college settings were calculated.

Physical Activity Perceived Barriers Likert Scale adjustments were done carefully to include the objectives of the study. Because of the original version barriers, the scale was completely inappropriate for this study. All items were negative statements; a higher score indicates a higher possibility that the item was a barrier. The percentage of each barrier was assessed by calculating the total percentage of subjects who had agreed to the statements. The ranking of perceived barriers to physical activity of the sample was seen in (Figure 1 and Figure 2).

The students were ordered to check all responses that applied based on what they perceived were barriers to participating in physical activity from a list of 7 internal and 7 external potential perceived barriers. A descriptive analysis of three barriers to physical activity revealed the following facts frequencies and percentages based on the modified internal barriers to physical activity scale. The top three internal perceived barriers for college students to participate in physical activity were “lack of motivation” 168 (84%), “feeling too tired and exhausted” 135 (67%), “Ignorance about the benefits of physical activity” 125 (62%). Whereas, the least identified internal barriers were “lack of energy” 24(12%),

On the other hand, the three most common external perceived barriers of college students toward physical activity were found “lack of time” 157 (78%), “my parents give academic success priority over exercise” 149 (74%), and “my family or friends do not encourage me to exercise” 127 (63%). On the other hand, the least frequently mentioned barriers were “lack of social support” 38 (19%).

Figure 1: Internal perceived barriers of PA among college students

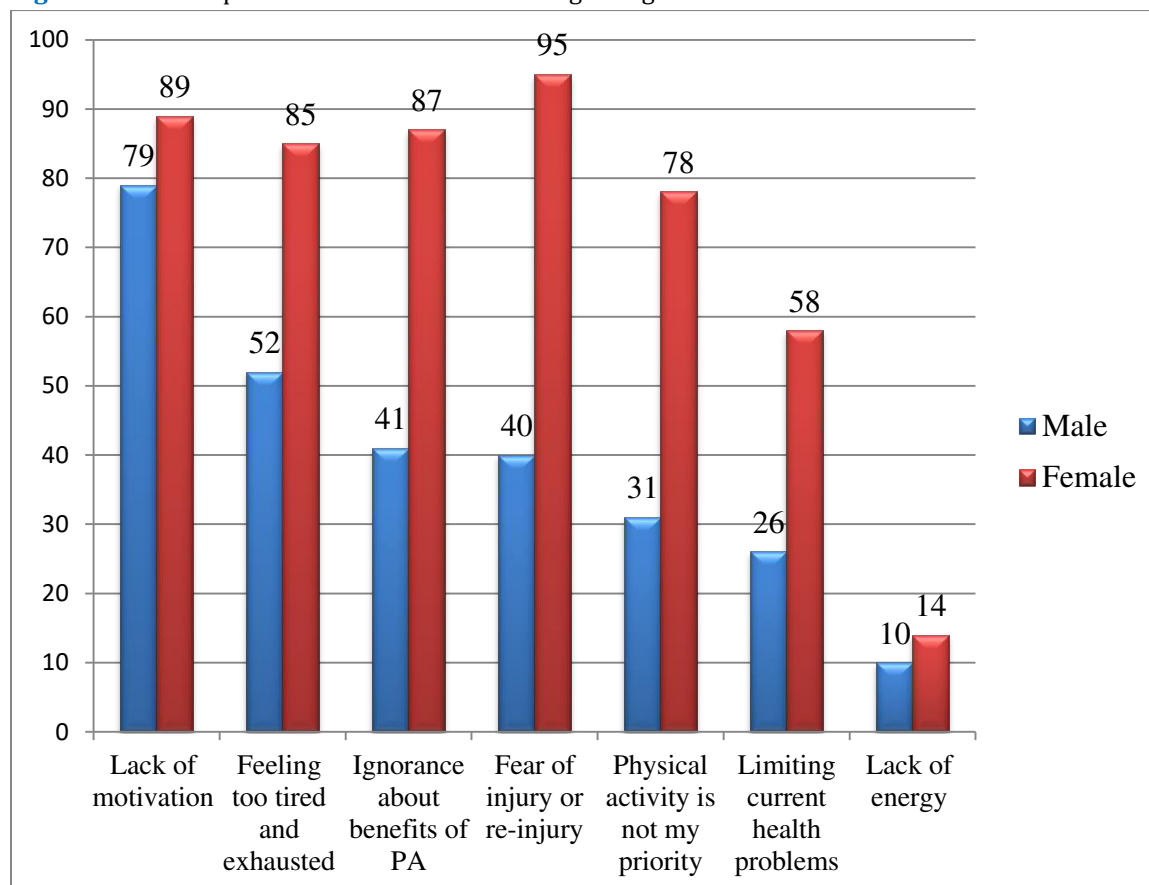
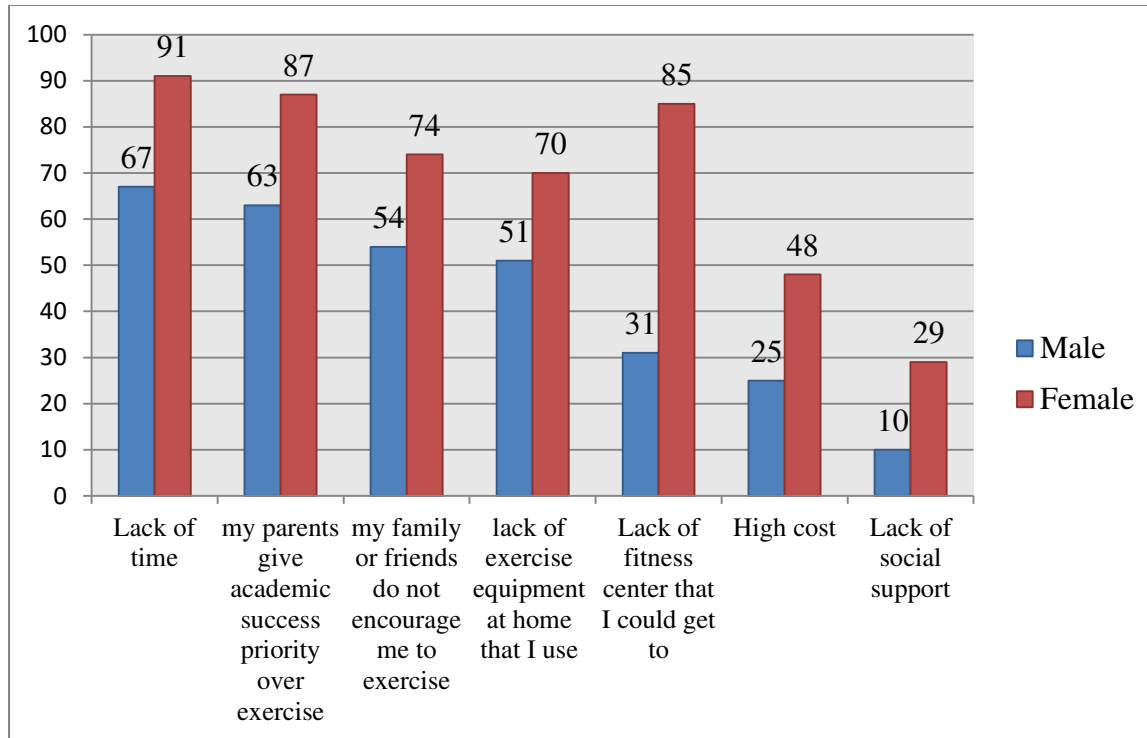


Chart 2: External perceived barriers of PA among college students



**Disparity to participate in Physical Activity among College Students**

The higher the mean scores in perceived barriers the higher barriers toward physical activity.

The total mean score of external barriers was reported as higher than the mean score of internal barriers. There were gender differences in mean levels of perceived barriers. Male students have higher rates on all questions which have significant differences (Table 2 and Table 3). The current result revealed that statistically significant ( $p < 0.002$ ) differences were found in mean scores between males and females concerning physical activity. Females cited consistently higher levels of perceived barriers than males.

**Table 2. Physical Activity Level of college students associated with Department**

PAL	Department	All (n=201)	Male (n=108)	Female (n=59%)
<b>Low</b>	Language	45 (41%)	19 (37.3%)	26 (44.1%)
	Mathematics	22 (20%)	15 (29.4%)	7 (11.9%)
	Natural Science	17 (15.5%)	13 (25.5%)	4 (6.8%)
	Social Science	7 (6.4%)	3 (5.9%)	4 (6.8%)
	Physical education	3 (2.7%)	1 (2%)	2 (3.4%)
	Education	16 (14.5%)	-	16 (14.5%)
<b>Moderate</b>	Language	20 (34.5%)	12 (34.3%)	8 (34.8%)
	Mathematics	17 (29.3%)	10 (28.6%)	7 (30.4%)
	Natural Science	10 (17.2%)	7 (20%)	3 (13%)
	Social Science	5 (8.6%)	4 (11.4%)	1 (4.3%)
	Physical education	4 (6.9%)	2 (5.7%)	2 (8.7%)
	Education	2 (3.4%)	-	2 (8.7%)
<b>Vigorous</b>	Language	8 (24.2%)	6 (27.3%)	2 (18.2%)

Mathematics	7 (21.2%)	6 (27.3%)	1 (9.1%)
Natural Science	7 (21.2%)	5 (22.7%)	2 (18.2%)
Social Science	3 (9.1%)	2 (9.1%)	1 (9.1%)
Physical education	7 (21.2%)	3 (13.6%)	4 (36.4%)
Education	1 (3%)	-	1 (9.1%)

**Table 3. Students' independent t-test samples by gender**

Variables	N	Males		Females		All		P-value
		M	SD	M	SD	M	SD	
<b>Internal barriers</b>	108	2.45	1.67	4.03	1.45	6.48	3.12	<0.002
<b>External barriers</b>	93	3.14	1.8	4.57	1.01	7.71	2.81	

Note: - M= mean; N= number of respondents; SD= Standard deviation; p < 0.05.

### Discussions

The primary purpose of this study was to investigate barriers of college students toward physical activity stratified by gender in Begemidir College of Teachers Education. The results of each research question were discussed in this chapter. The study revealed that lack of motivation 168(84%) was the primary internal barrier indicated among study participants that contributed to physical inactivity. This could be due to educational engagements and spending more time studying instead of participating in physical activity, or playing mobile games; social media and lack of interest in physical activity were barriers to regular physical activity participation. Consistent with the findings of our study, motivation is one of the main factors in preventing college students' involvement in physical activities (Castillo-Paredes et al., 2021). This result is supported by a study conducted by Al Siyabi et al., (2021). A study by Anjali & Sabharwal, (2018) found that a lack of motivation was the most internal perceived barrier among college students in India. The study also reported a substantial amount of personal, social, and environmental factors such as time constraints, tiredness, stress, family control, safety issues, and much more as barriers to participating in physical activity. According to (Pandolfo et al., 2016) many college students are motivated to improve their physical activity levels but often fail to act on their good intention. On the other hand, the least frequently cited internal perceived barrier was lack of energy 24 (12%). However, this result contrast with previous studies conducted among women in Jordan (Mariam & Mazin, 2019).

The most significant stated external barrier to regular participation in physical activity among college students was lack of time 157 (78%). Most respondents felt that their daytime is too busy because they scheduled more time around for studying and work. There was also a lack of support from friends or families and they thought that physical activity is time-consuming. Hence, the participants did not feel they had any additional time left for physical activity. This result was aligned with a study conducted by Awadalla et al., 2014; and Endozo-Larceet et al., 2018. Moreover, a study conducted among high school students by (Pandolfo et al., 2016) found that lack of time was the most frequently listed barrier related to weekly amounts of leisure time physical activity. Also, a study among college students in Manila, Philippines (Puen et al., 2021) revealed that lack of time due to a busy lesson schedule and social and familial responsibilities were the most commonly cited barriers. However, the least external perceived barrier of college students in this study was lack of social support 38 (19%). A similar result was observed in a study conducted by César et al., (2018) stating the significant barriers to physical activity among physically inactive students as time limitations, lack of money, lack of safe sports places, not being interested in sports and the body cannot tolerate physical activity. However, the finding of our study is in contrast with a similar study in Saudi Arabia among medical students that reveal predictors of physical inactivity were low father education, dead or retired father,

mothers not working for cash, families with five members or more, and non-participation in sports clubs (Abdel-Salam & Abdel-Khalek, 2016).

In this study, female students had statically significantly higher levels of overall physical activity than males. Similar studies supported the findings of this particular study, indicating that the mean overall activity of females was significantly greater than the mean overall activity of males. Therefore, the analysis indicated that female students were less active than male students. This result was consistent with a study done by Gupta and Varghese, (2019).

### **Conclusions**

The results revealed that lack of motivation and lack of time were the most significant internal and external barriers respectively to physical activity involvement. Whereas, the least internal and external barriers to students' physical activity participation were lack of energy and lack of social support respectively. Moreover, the result of this study showed that there were statistically significant differences in mean scores between male and female college students' physical activity participation in both internal and external barriers. However, due to the sample size selected from only one college, the results may not be generalized to other colleges. Therefore, there is a requirement for future study, which will be conducted by other colleges to be generalized for all colleges. It will be useful to exactly recognize perceived barriers and then recommend changes to develop physical activity among college students. In conclusion, understanding the perceived barriers to taking part in physical activity associated with physical inactivity will greatly assist in developing a comprehensive physical fitness program for college students to achieve the minimum weekly physical activity recommended by the American College of Sports Medicine (ACSM) guidelines so that efficient health can be promoted.

### **Limitations of the Study**

This study had several limitations which must be considered. The first limitation was the sample size was taken from only regular students. If this research was being included the extension students, the result might be better than the existing study. Second, the study sampling site was recruited from only BCTE due to financial constraints; other colleges were not included in the study. Therefore, the results were only generalized to this population, not generalized to other college students. If the study includes other colleges, maybe different college students' physical activity preferences, levels, and perceived barriers were researched more and more precise results would be obtained. Third, the researcher utilized a descriptive survey research design. The participants of the study recognized the weakness during the filling of questionnaires. Hence, the participants devastating to give truthful answers to questions they thought to be personal. Lastly, due to the lack of local research, the research mainly depends on only foreign research literature. Despite the above limitations, this study will pave the way for further large scale-studies.

### **Funding**

No specific fund is allocated to this particular study.

### **Acknowledgments**

The author is very much grateful for colleagues and respondents who provide relevant assistance, guidance, and contributions throughout this study work.

### **Conflict of Interest**

The author declares no conflict of interest for the publication of this research.

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