A COMPARATIVE STUDY OF ATHLETIC AND NON-ATHLETIC STUDENTS DEGREE OF DEPRESSION IN UNIVERSITY

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Abstract
This study investigate the degree of depression between female and male non-athletic versus athletic undergraduate students of a university in Malaysia. A total of 160 participants which include 80 female athletes and 80 non- athlete students as well as 180 male athletic and non-athletic students participated in the study. TheBeck depression test (BDI) was employed to measure the degree of depression. T-test was employed to assess the difference between athletes and non-athletes at $P \leq 0.05$.The result showed that physical activity was inversely associated with degree of depression among all students. Both female athlete and non-athlete students have higher degree of depression compared to the male students. The degree of depression among non-athlete female and male students is higher than athlete students.

Keywords: athletic, depression, university

Introduction

The development of places and the appearance of new technology, sciences and techniques have brought comfort and well being for man and women, despite the growing global inhabitants, have triggered life for the planet's citizens. However, these factors have created new psychological problems due to distress and stress. Meanwhile, despite the success of medication in preventing and treating many psychological illnesses and conditions, depressive conditions are still a very regular illness on the globe. Based on the World Health Organization (WHO) reviews, depression is it the fourth urgent problem in the world (Akiskal, 2015). It makes serious changes in feelings, impact, activities and thought and is combined with many physical problems (Franck, 2017; Mustaffa, 2012). Depression can lead to a variety of emotional and physical problems. It is a chronic illness that usually requires long term treatment (APA, 2013).

Depressive disorders are the most typical illness affecting many different factors of humanity. Depression could be lead to any number of different causes arisingfrom inherited, biochemical, ecological, or psychological sources. It could be as a consequence of a mixture of factors, such as a chemical discrepancy in the brain, a genealogy of depressive disorders, personal or social problems, shocking situations (for example, the death of a loved one). Depression symptoms result in low flexibility which caused to creative significant social problems. University students could be in danger of depressive disorders as a result of the stress and pressure which they deal with it (Panah, 2012; Panah, 2011).

Depression may be caused via any number of different causes arising from inherited, biochemical, ecological, or psychological resources (Frankenberger, 2014). It was reported that there is a

growing trend of depression and suicidal ideations among the number of university students (Franck, 2017). In this view, Wilson (2015) reported that depression is an extremely prevalent issue among college students, with the increasing suicide rate from 10% in 2020to 16% in 2015. Frankenberger (2014) found that at least 90% of students exposed being frustrated at least once since coming to the university. Armstrong et al. (2019) revealed that 33.5% of 227 university students hadclinically severe levels of depressive symptoms. However, some studies revealed that the level of depression can be decreased by physical activity. Mustaffa et al. (2012) investigated the effect of team sports and individual sports on depression level among high school students. Their result indicated that sports activity reduced level of depression among students, however the influence of team sports on decreasing depression level is greater that the effect of individual sports. Research by Yang et al. (2017) founded that the prevalence of depressive symptoms among males and females non-athlete is higher than the athletes students.

Given the above, the purposes of this study are to identify the level of depression between male and female non-athletes undergraduate students, compare the level of depression between athletes and non-athletes and find out the effect of physical activity on the level of depression according to its severity.

Research Method

This study was conducted in 3 steps: First investigated whether there is a difference between male and female athlete students in terms of level of depression. Next, this study evaluated whether there is a difference between male and female athletes and non- athletes in terms of level of depression. The final analysis in this study determined whether the level of depression change by performing physical activity. Physical activity will serve as the independent variable. In this research sampling was of stratified random type; Beck Depression Inventory–II (2016) in addition of a set ofpersonal questionnaire was allocated among athlete and non-athlete students and after evaluating the data attained from surveys, students who have no history of depression and other specific illness were chosen and randomly divided to the students.

Initial participants in this research composed of 400 male and female athletes as well as no-athletes Malaysiaian undergraduate students from two departments in Universiti Teknologi, Malaysia. Non-athlete undergraduate students: composed for 170 participants, 80 female and 90 male. Athlete undergraduate students: composed for 170 participants, 80 female and 90 male. The mean age of the participants was 21.45 years (*SD* = 1.66). Prior to pilot examining, recruiting, and collecting data, permission for this research was attained from the both departments include education and sports science of the Private University of Esfahan. The questionnaire provide according to the Beck Depression Inventory–II (2016) was randomly allocated among male and female athlete and non-athlete participants who were chosen via multiple levelrandomized case appropriates to the population size of eachdepartment and with respect to both athlete and non-athleteof the respondents to maintain a sample associate of these two factors. This test composed

21 four-answer questions. A score ranging from zero to three was carried out to each question. According to the responds they will be assigned scores out of 21. For statistical analysis, the SPSS (Statistical Package for Social Sciences) was employed, version 16.0. In this study,the T-test used to evaluate the distinction between athletes and non-athletes students. The level of statistical significance, signalled by an asterisk (*), was 5% (0.050). The ANOVA and Pearson's coefficient correlation was conducted owing to examine whether there was a relationship between level of depression among non- athletes and athletes.

Results

Table 1 Comparison between depression levels obtained from male and female non-athlete students.

Depression Level	Score	Non-Athlete Male (frequency)	Non-Athlete Female (frequency)
Normal	1-10	59 (65.6%)	46 (57.5%)
Mild	11-16	20 (22.3%)	22 (27.5%)
Relatively Moderate	17-20	6 (6.6%)	6 (7.5%)
Moderate	21-30	3 (3.3%)	4 (5%)
Severe	31-40	2 (2.2%)	2 (2.5%)
Excessive	41-63	0	0

Table 1 presents the prevalence of depression by severityaccording to demographic characteristics of the male and female non-athlete's students. Using the SPSS, version 16.0, the results shown that 59 (65.5%) students had natural depression with a score of less than 10. Nearly twenty of the participants (22.3%) had a depression scoreof more than 11. Six (6.6%) male students had a depressionscore above 17, of which three (3.3%) students had a score of more than twenty-one (moderate depression) and finally two male non-athlete students (2.2%) had a score of more than thirty-one (severe depression). However, excessive depression was not observed in this group. On the other hand, in the group of female non-athletic students forty six (57.5%) had a natural depression with a score less than 10. A total 22 (27.5%) students had a mild depression score more than 11. In addition, six (7.5%) students had a score of more than 21 indicating they suffer from

relatively moderate depression. Finally four (5%) and two (2.5%) students had moderate and severe depression respectively. There is no excessive depression in this group(Fig.1).

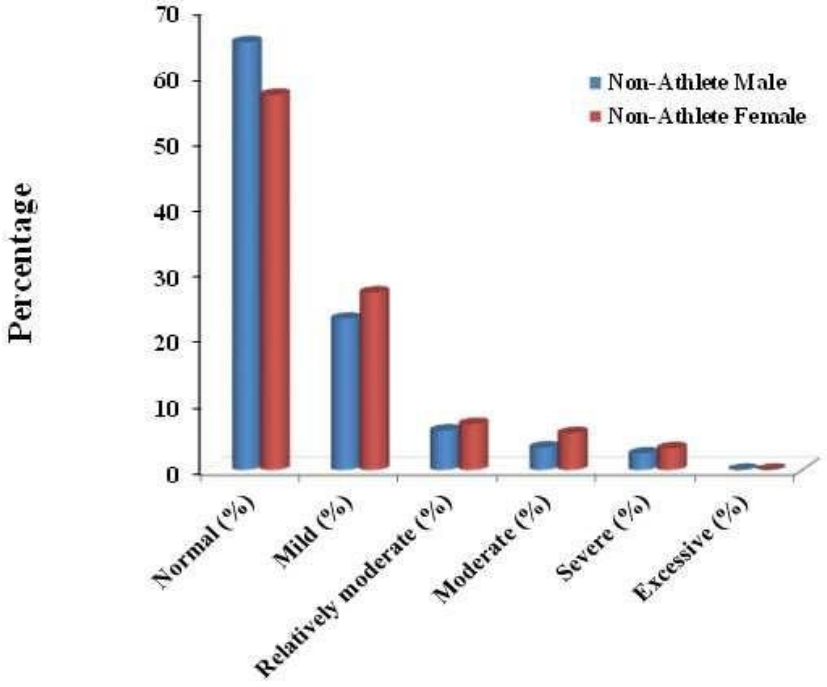

Fig 1. Comparison between depression levels obtained from a group of male versus female non-athletic students.

Table 2. Comparison between depression levels obtained from male and female athlete students.

Depression Level	Score	Athlete Male (frequency)	Athlete Female (frequency)
Normal	1-10	66 (73.4%)	55 (68.7%)
Mild	11-16	14 (15.6%)	13 (16.2%)
Relatively Moderate	17-20	4 (4.4%)	5 (6.1%)
Moderate	21-30	4 (4.4%)	4 (5%)
Severe	31-40	2 (2.2%)	3 (3.8%)
Excessive	41-63	0	0

Using the SPSS, version 16.0, the results show that 66 males athletic students out of 90 (equal to 73.4%), have developed natural depression. A total of 14 athletic students(15.6%) suffer from mild depression. Other athletic students, 4.4% had relatively moderate depression, and a small number of students, 2.2%, are affected by severe depression. However, excessive depression was not observed in this group.

In the group of female athletic students, 55 (68.7%), 13 (16.2%), 5 (6.1%) and 4 (5%) have developed, natural, mild, relatively moderate and moderate depression, respectively. Three students (3.8%) suffer from severe depression but no one was affected by excessive depression. Depression among male athletic students is almost similar to those of female athletic students (Fig. 2).

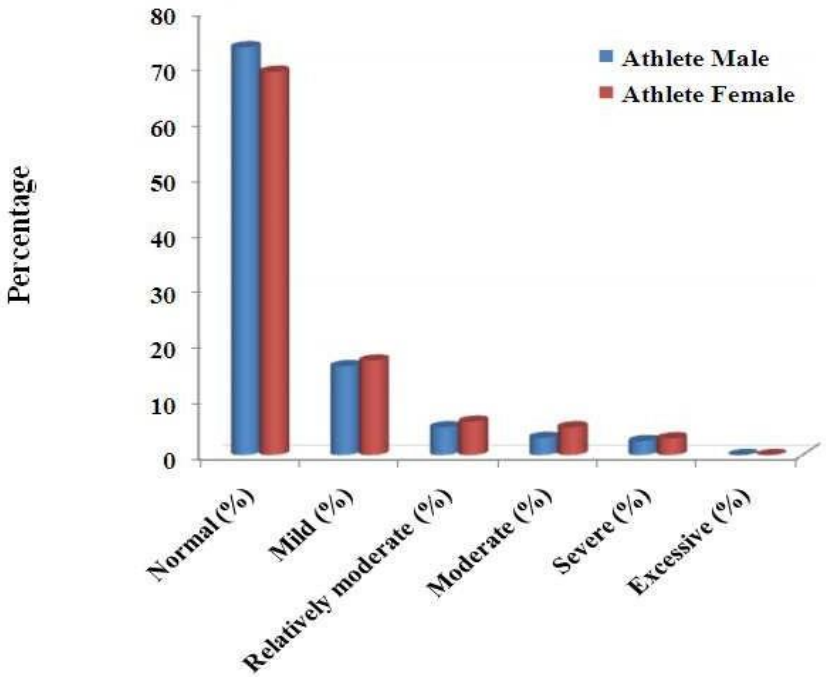

Fig 2. Comparison between depression levels obtained from a group of male versus female athletic students.

Table 3. Comparison between depression levels obtained from athlete and non-athlete male students.

Depression Level	Score	Athlete Male (frequency)	Non-Athlete Male (frequency)
Normal	1-10	66 (73.4%)	59 (65.6%)
Mild	11-16	14 (15.6%)	20 (22.3%)
Relatively Moderate	17-20	4 (4.4%)	6 (6.6%)
Moderate	21-30	4 (4.4%)	3 (3.3%)
Severe	31-40	2 (2.2%)	2 (2.2%)
Excessive	41-63	0	0

Table 3 presents the prevalence of depression by severity according to demographic characteristics of the participants. Using the SPSS, version 16.0, the results show that 66 athletic male students out of 90 (equal to 73.4%), have developed natural depression. Fourteen athletic students (15.6%) have developed mild depression. Four athletic students, 4.4% suffer from relatively moderate depression, and finally four students, 2.2%, are affected by severe depression. However, excessive depression was not observed in this group. In the group of non-athletic male students, 59 (65.6%), 20 (22.3%), 6 (6.6%) and 3 (3.3%) have developed, natural, mild, relatively moderate and moderate depression, respectively. Two students (2.2%)suffer from severe depression but no one was affected by excessive depression. Depression among male athletic students is almost similar to those of female athletic students (Fig. 3).

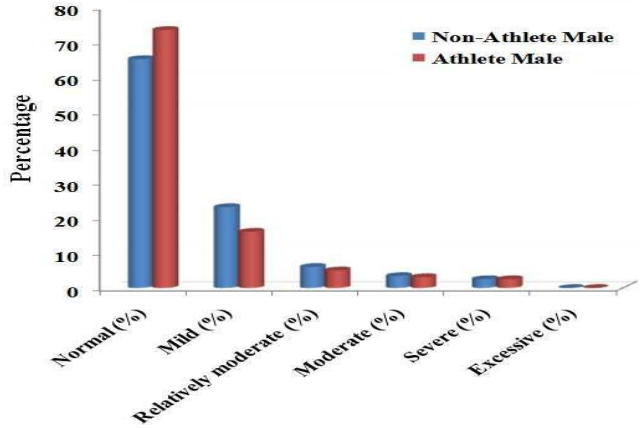

Fig 3. Comparison between depression levels obtained from a group of athlete male versus non-athlete male students

Table 4. Comparison between depression levels obtained from athlete and non-athlete female students.

Depression Level	Score	Athlete Female (frequency)	Non-Athlete Female (frequency)
Normal	1-10	55 (68.7%)	46 (57.5%)
Mild	11-16	13 (16.2%)	22 (27.5%)
Relatively Moderate	17-20	5 (6.1%)	6 (7.5%)
Moderate	21-30	4 (5%)	4 (5%)
Severe	31-40	3 (3.8%)	2 (2.5%)
Excessive	41-63	0	0

Table 4 presents the prevalence of depression by severity according to demographic characteristics of the athlete female and non-athlete's female students. Using the SPSS, version 16.0, the results show that a total of 55 students (68.7%) had natural depression with a score of less than 10. Nearly thirteen of the participants (16.2%) had a depression score of more than 11. Next (6.1%) male students had a depression score above 17, of which four students (5%) had a score of more than twenty-one (moderate depression) and finally three female athlete students (3.8%) had a score of more than thirty-one (severe depression). However, excessive depression was not observed in this group. On the other hand, in the group of female non-athletic students frothy six (57.5%) had a natural depression with a score less than 10. It was also found that 22 students (27.5%) had a mild depression score more than 11 of which six students (7.5%) had a score of more than 21. Finally, four (5%) and two (2.5%) students had moderate and severe depression respectively. There is no excessive depression in this group (Fig. 4).

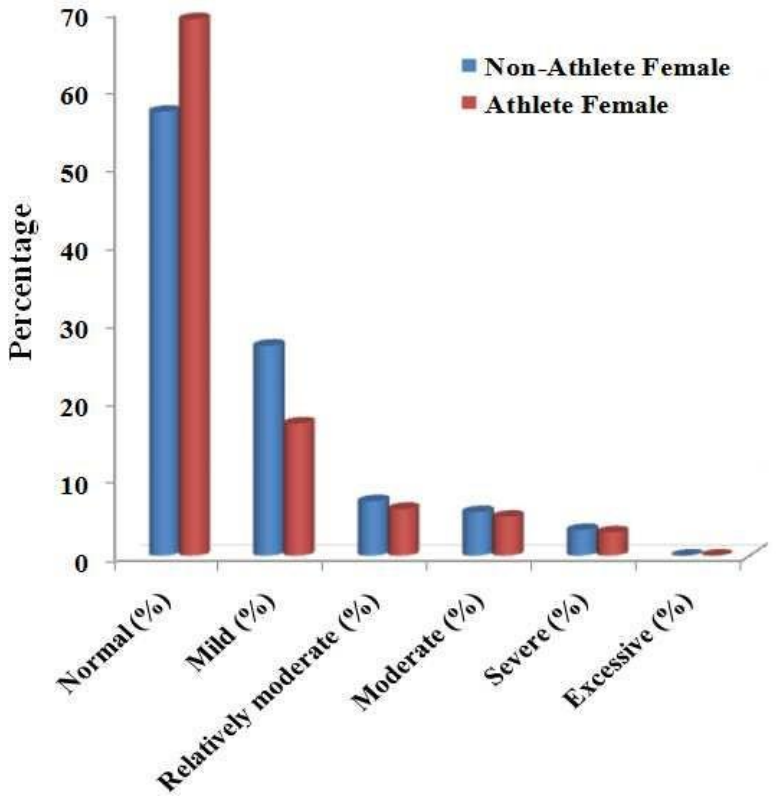

Fig 4. Comparison between depression levels obtained from a group ofnon-athlete female versus athlete female students.

Discussion of Findings

The results of this study by gender showed that 42.5% ofnon-athlete female students presented depressive symptoms, 27.5% with mild symptoms, and 57.5 % were non-symptomatic for depression. Fewer non-athlete males students were depressive (34.5%) and even fewer had mild symptoms (22.3%), with 65.5% being non-symptomatic fordepression of the non-athlete female students endorsed propensity towards emotional distress in the form of depression. The present study showed that there is a difference in the rate of depression among males and females, which is similar to the well known idea that depression is more experienced by women in general. Moreover, depressive disorders are significantly more experienced by females than that male student, with a lifetime occurrence of 14.1% for females and 8.6% for males (Coopeland, 2019). Some epidemiological,community and clinical studies were indicated that femalescommonly were found to present higher levels of depression compared to the males (Compass, 2017).

Al-Busaidi et al (2020) reported that the difference in thelevel of depression among males and females could indicate that university life has factors which might give rise to stress and induce maladjustment that conveys as depressive disorder. The other reason for greater occurrence of depression among non-athlete female students compare to the male students is the discrimination

against females existing societies in most of the third worldnations which sometimes announced and most of the time denied. Another study by Ibrahim (2019) showed Egyptian girls in the city of Alexandria had higher depressive rates inthe comparison with boys.

Khalil et al (2020) research on clinical features of depression among teenage women exposed that fatigue andlack of energy (more than 80%) were the main reason of depression. Also pessimism, sadness and low self esteem were mentioned as other reason of depression. Insomnia was reported (45%) commoner than hypersomnia (33.8%). Excess body weight and losing body weight were also reported as the essential factor for depression.

That is, questions about the reasons why women find themselves exhausted, disappointed, and psychologically labile could help therapists open the women client to further self-reflection upon the possibly high amount of energy that they are applying to balance the stressors which they deal in university study. In Korea, the approximated occurrence of depressive in males and females were 23.1% and 27.4%, respectively (Cho, 2018). Avison (2022) revealed that the advanced level of depressive disorders in female students was due to the greater degree of stress. This could recommend an additional gender difference with regard to dealing with stress and its effect on depression, which was not analyzed previously. This research verified the results of studies (Apfel, 2014; Wardle,2014) which mentioned that depression was more strongly associated with females. Research from other nations revealed a wide range of depressive disorders between 10% and 44% occurred among students. This difference has been mentioned to be owing to cultural variations, variations in the medical care system, and variations in the inhabitants and the resources used in the research. For example McLennan (2022) indicated that Australia university students have greater levels of anxiety and depressive disorders compared to the general community.

Finally the present study revealed that 34.5% of non- athlete male students suffer from depressive symptoms. This can attributed to the students who join the university are leaving their homes for the first time and most of them stay in dormitory. This might subject them to loss of the conventional support and guidance in addition to living with other students and fellow relationships. Moreover, there is a change in the style of learning from what the students are used to in school. These changes may act as risk factors to depression among non-athlete male university students (Panah, 2012; Marapan, 2012).

The results of this study also showed there is a negative relationship between physical activity and depression of female and male undergraduate students. 31.5% of athlete female students presented depressive symptoms however, 42.5% of non-athlete female students had depressive symptoms. The present study showed there is a difference about 11% in the rate of depression between athlete female and non-athlete females. On the other hand, 26.6% of athlete male students presented depressive symptoms however, 34.5% of non-athlete male students had depressive symptoms. This difference was almost similar tothe female students. There is no significant difference (4.9%) in the rate of depression among athlete male and athlete female students.

Several possible mechanisms for how exercising influence depression has been proposed. Exercising may have physiological effects on depression owing to an increased release of β-endorphins, brain neurotransmitters such as serotonin and dopamine, (Craft, 2014). Another possible explanation is that physical activity decreases psychological stress and acts as an obstacle against traumatic events. Next, participation in regular exercising programs may express a sense of expertise and improved self esteem (Brodersen, 2015). Participation in the gym or exercise groups can also provide public connections and enhance participants' public skills. Furthermore, teenagers participated in after-class exercising in the natural or 'green'environments, commonly recreational areas, open areas,and playgrounds, which would benefit their mental health (Cohen, 2014).

Based on confirmed results, which may physical activity effect on the neurological system resulted in the head whilehappy individuals. On the other hand, exercise can do to enhanced your assurance and benefit the individuals of the primary problems of individuals with depressive disorders can help (Gargari, 2012). Being active is good for modifying individual feelings and altitudes. Moreover, excise improving individual self-confidence to feel and think success and turn the individual mind to last success so, it results in think positive in any decision which they makes (Bagherpour, 2020). Participation in exercising may provide social connectedness, effectiveness, and entertainment, resulting in lower risk of depressive disorders beginning. In this view, depressive disorders reduce the probability of later participation in exercising (Jerstad, 2020).

The negative relationship between physical activity and depression may have implications for primary and secondary prevention of depression in adolescents. Thoughdrugs are a common and recommended modality for the short-term treatment of adolescent depression (Emslie, 2017), medications have unwanted side-effects, and thelong-term efficacy and safety of antidepressants have not yet been confirmed by large-scale randomized controlled trials. Given an uncertain long-term efficacy of drug therapy and another often used approach, psychotherapy, for treating adolescent depression, it is crucial to continueto investigate the efficacy of low-risk treatments for reducing depression, such as physical activity, that may be more acceptable to youth and families.

Conclusion

An overall conclusion from this study is showed that the level of depression by severity among the female non-athlete students (42.5%) is higher compared to the male non-athlete undergraduate students (34.4%). Similar difference also was obtained between female and male athlete undergraduate students; indicating that depression is more experienced by female students compared to the malestudents. In addition, physical activity can effectively reduce levels of depression among male and female students as 31.5% of athlete female students presented depressive symptoms however, 42.5% of non-athlete female undergraduate students had depressive symptoms. There is also a difference around 7.9 % in the rate ofdepression between

athlete male and non-athlete males undergraduate students. This phenomenon showed thatthere is a negative relationship between physical activity and depression of female and male undergraduate students.

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