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# Depression among Athlete Students and Differences by Gender at Physical Education of Bengkulu University in 2022

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**Abstract**

The Indonesia National Adolescent Mental Health Survey (I-NAMHS), over a third of all adolescents (34.9%) reported a mental health problem, with depression in third position in mental health problems (5.3%). High levels of physical activity and low sedentary behavior of athlete students have been associated with improved self-concept and reduced mental health problems, such as depression. As a result, depression has received little attention in this population. To describe the prevalence of symptoms of depression among athlete students at a single university. This cross-sectional study was administered to undergraduate students enrolled in physical education, faculty of teacher training, and education at the University of Bengkulu. Participants (n=70) completed the Beck Depression Inventory-II (BDI-II) and a demographic questionnaire. Differences in symptoms of depression were calculated by gender. The prevalence of symptoms of depression, as measured on BDI-II, was 36%, and there is no significant gender difference in the prevalence of symptoms of depression ($p>0.05$, distributed between male and female participants (52% women and 24.4% men). The BDI-II identified the prevalence of symptoms of depression among athlete students. The symptoms of depression in female students were higher than in male students.

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## INTRODUCTION

College students undergo various social, environmental, and psychological changes as they transition from high school to university and from adolescence to adulthood (Arnett, 2000; Beiter et al., 2015; Bruffaerts et al., 2018; Liu et al., 2017). They are susceptible to mental problems like depression. Depression is one of the most prevalent mental health problems among college students (Auerbach et al., 2016; Auerbach et al., 2018; Farabaugh et al., 2012). Suicide, the second-leading cause of mortality among college students, can be caused by depression (Floyd et al., 2007). The number of college students diagnosed with depression increased from 10% in 2000 to 15% in 2006 (American College Health Association [ACHA], 2008). According to the Indonesia National Adolescent Mental Health Survey (I-NAMHS), more than a third of all teenagers (34,9%) reported a mental health problem, with depression being the third most common mental health problem (5,3%) (Wahdi et al., 2023). Although its prevalence is not exceptionally high, it should be noted because college students are essential in determining a country's economic growth and success (Auerbach et al., 2018). Depression among college students is related to poor academic performance (Hysenbegasi et al., 2005), increased levels of anxiety, physical illnesses, and decreased physical activity (Cranford et al., 2009).

Athlete students in Physical Education are expected to maintain an active lifestyle. High levels of physical activity and low sedentary behavior have been associated with better self-concept and lower mental health problems like depression (Biddle & Asare, 2011). As a result, depression received little attention in this population. The prevalence of symptoms of depression is approximately the same as that of their non-athlete peers (Yang et al., 2007). Numerous studies have discovered that the prevalence of symptoms of depression ranges from 15.6% (Proctor & Boan-Lenzo, 2010) to 23.7% (Wolanin et al., 2016) in athlete students. On the other hand, athlete students have a lower prevalence of symptoms of depression than their non-athlete peers (Armstrong & Oomen-Early, 2009; Proctor & Boan-Lenzo, 2010; Storch et al., 2005)

The different inquiry times and demographics may influence the contradictory research findings. The majority of the studies on athlete students are from the United States (Divin, 2009; Proctor & Boan-Lenzo, 2010; Wolanin et al., 2016; Yusko et al., 2008), along with a few from Europe and the Middle East (Alamdarloo et al., 2019; Clemente et al., 2016; Pustivšek et al., 2019). The absence of evidence from the Asian population and the inconsistency of those studies' results urges additional studies on the mental health problems of athlete students. It makes it challenging to establish mental health interventions. Furthermore, previous studies examining depression in athlete students have revealed that female athletes have higher levels of depression than their male peers (Storch et al., 2005; Wolanin et al., 2016; Yang et al., 2007). Yang et al. (2007) reported symptoms of depression in 21% of 257 college students and found that female athletes reported higher symptoms of depression than male athletes (Yang et al., 2007). Similarly, 722 athlete students reported considerably higher levels of symptoms of depression among female athletes (28.5%) compared to male athletes (Wolanin et al., 2016). Nevertheless, the reason behind the gender difference remains unknown.

This study aimed to describe the prevalence of symptoms of depression among athlete students and investigate

how gender may influence symptoms of depression among this population. Addressing mental health problems in this population, such as depression, is critical. Athlete students participate in highly monitored and organized athletic courses; thus, there is abundant opportunity to develop and execute effective depression prevention interventions in this population.

## METHODS

### Participants

A cross-sectional investigation on the prevalence of depression in a population of athlete students was conducted. Our participants were undergraduate students enrolled in physical education, faculty of teacher training, and education at the University of Bengkulu during 2022-2023. Participants were recruited between September and October of 2022. The students were invited to participate through direct forwarded emails, group postings, and emails to the lecturer. Eligibility criteria included being 18 years old and a current physical education student at our university. The researchers informed the students about the purpose of the study and data collection methods during an online meeting; a copy of the participants' information and informed consent were given to the students at this time, and the students agreed to return it to the researchers the following day via email. The students were told that their privacy and confidentiality would be respected. The students had the right to refuse participation in our study or withdraw consent to participate at any moment without repercussions. Seventy students agreed to participate in this study and completed the questionnaire. Data were collected during October and November of 2022.

### Instruments

The questionnaire was divided into two sections: demographic information and depressive information. Demographic information includes age, gender, and number of years in college. This information represents a collection of variables commonly associated with depression in the younger population (Bahhawi et al., 2018; Wong et al., 2006). The age variable was dichotomized into $< 21$ and $\geq 21$ years old (Mahroon et al., 2018). Beck Depression Inventory-II (BDI-II) was used to assess depressive symptoms. Beck Depression Inventory-II (BDI-II) is one of the most commonly used valid instruments for determining the severity of depression in clinical and normal settings (Jackson-Koku, 2016). Beck Depression Inventory-II (BDI-II) includes new items corresponding to the diagnostic criteria for depressive disorders in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV). This second edition was designed to assess the severity of self-reported depression among adolescents and adults (Beck et al., 1997). It indicates the presence and severity of depressive symptoms but does not serve as a diagnostic tool. The BDI-II consists of 21 self-reported items that measure cognitive and affective symptoms. Each item has a 4-point scale from 0 (no depressed symptom) to 3 (severe symptoms).

The score is calculated by adding the scores from each questionnaire, with a maximum of 63 points and a minimum of 0. The higher the score, the more severe the symptoms. In normal populations, a score over 20 indicated that an individual was depressed (Kendall et al., 1987). A score under 13 is considered normal or minimal depression; 14-19 is considered mild depression; 20-28 is considered moderate

depression; and 29-63 is considered severe depression (Beck et al., 1997; Jackson-Koku, 2016). The BDI-II was chosen for this study due to its relatively short administration time (approximately 5 to 10 minutes) and reliable psychometric support (Beck et al., 1997). The Indonesian version of BDI-II has demonstrated good validity and reliability psychometric properties. The varied reliability is Croncbach's alpha from 0,80 to 0.92 (Sorayah, 2015).

## Data Analysis

Frequency and percentage were used to analyze qualitative variables, while mean and standard deviation was used to analyze quantitative variables. We utilized the Kolmogorov-Smirnov test to determine the normality of the data. Using Chi-Square, bivariate analyses were performed. The statistical software Statistical Package for the Social Science (SPSS version 22 for Mac, IBM Corp., Chicago, IL, USA) was used for data coding, processing, and analysis at a significance level of $p < 0.05$.

## RESULT

This study included a total of 70 athlete students (36% women and 64% men). The age ranged from 18 to 23, with a mean of 20.5 ± 0.16 years. Based on demographics, 43% of students in this study were juniors, 30% were seniors, 16% were freshmen, and 11% were sophomores (Table 1).

**Table 1.** Participants Characteristics (n = 70)

| Variables | n | % | Mean ± SD |
|---|---|---|---|
| Age | | | 20.5 ± 0.16 |
| Age Groups | | | |
| < 21 | 26 | 37% | |
| ≥ 21 | 44 | 63% | |
| | | | |
| Gender | | | |
| Female | 25 | 36% | |
| Male | 45 | 64% | |
| | | | |
| Year in College | | | |
| First | 11 | 16% | |
| Second | 8 | 11% | |
| Third | 30 | 43% | |
| Fourth | 19 | 27% | |
| Fifth | 2 | 3% | |

The scoring of the BDI-II ranks each participant's depression, classifying each area as either "normal or minimal", "mild", "moderate", or "severe". Of our participants, 2% indicated severe depression, and 21% indicated moderate depression (Figure 1).

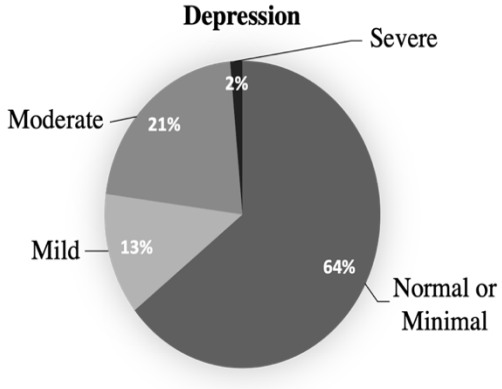


**Fig. 1**. The proportion of participants whose answers on the BDI-II indicated a normal or minimal, mild, moderate, or severe depression.

Of our participants, 36% had symptoms of depression above the normal range. In our study, there was no significant difference between men's and women's levels of depression (p=0.057), distributed between the male and female athlete students (52% women and 24.4% men) (Table 2).

**Table 2.** Total scores from the BDI-II and by gender

| | Categories | Total (n=70) | Female (n=25) | Male (n=45) | *P* |
|---|---|---|---|---|---|
| The BDI-II | Normal or Minimal Depression | 45 (64%) | 12 (48%) | 34 (75.6%) | NS* |
| | Mild Depression | 9 (13%) | 3 (12%) | 5 (11.1%) | |
| | Moderate Depression | 15 (21%) | 9 (36%) | 6 (13.3%) | |
| | Severe Depression | 1 (2%) | 1 (4%) | 0 (0%) | |
| | Score. Mean ± SD | 11.34 ± 1.09 | 15.6 ± 1.95 | 8.98 ± 1.18 | |

* NS: Non-significant

## DISCUSSION

According to our knowledge, this is the first report of the prevalence of symptoms of depression among athlete students at the faculty of teacher training and education, University of Bengkulu. Although the BDI-II questionnaire cannot be considered a diagnostic tool for mental disorders, it is helpful to determine the prevalence of symptoms of depression. We found a prevalence of symptoms of depression (36%) in our population. Balanza Galindo et al. (2008) and Fernández-Rodrguez et al. (2019) reported an even higher prevalence of psychological distress in the Spanish population based on large sample sizes (Balanza Galindo et al., 2008; Fernández-Rodríguez et al., 2019). Specifically, Balanza Galindo et al (2008) reported a prevalence of depression of 55.6% using the Goldberg Anxiety and Depression Scale (Balanza Galindo et al., 2008). Zhou et al. (2022) determined that the prevalence of depression among athlete students was lower than among non-athlete students (44.6% vs. 54.4%) using Patient Health Questionnaire-9 (PHQ-9) (Zhou et al., 2022). Meanwhile, Fernandez-Rodríguez et al. (2019) reported a lower prevalence of depressive symptoms (23.5%) using Hospital Anxiety and Depression Scale (HADS) (Fernández-Rodríguez et al., 2019). Unfortunately, using different screening tools limits the comparability of the findings.

These results were consistent with previous American studies (Proctor & Boan-Lenzo, 2010; Wolanin et al., 2016). However, the prevalence of symptoms of depression among athlete students in our study is higher than among US athlete students 15.6% to 23.7% (Proctor & Boan-Lenzo, 2010; Wolanin et al., 2016), Chinese University students (28.4%) (Gao et al., 2020) and global university students (30.6%) (Ibrahim et al., 2013). This suggests that symptoms of depression are relatively prevalent among athlete students (Ibrahim et al., 2013; Proctor & Boan-Lenzo, 2010). The 21% prevalence rate of moderate to severe depression was also consistent with the significant depression prevalence rate in the adult population (an estimated 6.7% depression prevalence in 12 months) (Ibrahim et al., 2013; Lindsey et al., 2009).

Previous studies suggest that athlete students are not immune to or at a reduced risk for clinically relevant symptoms of depression. Considering these findings, it may be pertinent for sport medicine professionals to consider depression risk among those providing services. It is crucial to avoid the presumption that athletes have minimal or

no depression risk. Symptoms of depression may also contribute to decreased performance on the field or in the classroom among students, although the effect of emotional distress on these activities requires further investigation. Depression-related symptoms may also exacerbate other health issues and negatively impact the athlete's overall health (Wolanin et al., 2016).

We discovered that symptoms of depression were more prevalent among female students than in male students (52% vs. 24.4%). A moderate level of symptoms of depression was 36% in female students, higher than in male students (13.3%). This suggests that female students may be more susceptible to depression than male students. These results were consistent with the previous study that the prevalence of female students who reported experiencing symptoms of depression were higher than male students (Kelly et al., 1999; Kessler et al., 2003; Silverstein, 1999). It is unclear why female students experience more symptoms of depression than male students. Previous studies have suggested that various biological and social factors, including different rearing environments, social roles, and societal attention toward female sports, contribute to an increased risk of depression (Altemus, 2006; Culbertson, 1997). Another possible explanation for the findings of this study is that women are more likely to seek help and thus report their symptoms than men (Culbertson, 1997). These findings could benefit sports medicine clinicians working with athlete students and implementing depression screening across various education levels. Different protective and risk factors could be investigated for male and female athletes students. Multisite, multiyear studies examining sports and gender interactions and cultural and demographic variables may be especially beneficial. The etiology of gender disparities is likely multifactorial. Further inquiry is needed to understand the processes and variables contributing to these findings (Ibrahim et al., 2013).

Future research in this field should aim to overcome these limitations. In any case, our findings highlight the necessity of implementing strategies to protect and, if necessary, improve the mental health and well-being of athlete students.

## CONCLUSION

We discovered a considerable prevalence of symptoms of depression in our population. In addition, we determined no difference between male and female depressive symptoms. We contend that our findings can be used to design strategies for the early identification of mental health disorders and psychological and other interventions that promote the mental health and well-being of athlete students. Further research is also required to determine why females and certain college years are more likely to develop depressive symptoms.

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## REFERENCES

Alamdarloo, G. H., Cheric, M. C., Doostzadeh, M., & Nazari, Z. (2019). The comparison of general health in athlete and non-athlete women. Health

psychology research, 7(1). https://doi.org/10.4081/hpr.2019.8047

Altemus, M. (2006). Sex differences in depression and anxiety disorders: potential biological determinants. Horm Behav, 50(4), 534-538. https://doi.org/10.1016/j.yhbeh.2006.06.031

Armstrong, S., & Oomen-Early, J. (2009). Social connectedness, self-esteem, and depression symptomatology among collegiate athletes versus nonathletes. Journal of American College Health, 57(5), 521-526.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. American psychologist, 55(5), 469. https://doi.org/10.1037/0003-066X.55.5.469

Auerbach, R. P., Alonso, J., Axinn, W. G., Cuijpers, P., Ebert, D. D., Green, J. G., Hwang, I., Kessler, R. C., Liu, H., & Mortier, P. (2016). Mental disorders among college students in the World Health Organization world mental health surveys. Psychological medicine, 46(14), 2955-2970. https://doi.org/10.1017/S0033291716 00166

Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J. G., & Hasking, P. (2018). WHO world mental health surveys international college student project: prevalence and distribution of mental disorders. Journal of abnormal psychology, 127(7), 623.

Bahhawi, T. A., Albasheer, O. B., Makeen, A. M., Arishi, A. M., Hakami, O. M., Maashi, S. M., Al-Khairat, H. K., Alganmy, O. M., Sahal, Y. A., & Sharif, A. A. (2018). Depression, anxiety, and stress and their association with khat use: a cross-sectional study among Jazan University students, Saudi Arabia. Neuropsychiatric Disease and Treatment, 2755-2761. https://doi.org/10.2147/NDT.S182744

Balanza Galindo, S., Morales Moreno, I., Guerrero Muñoz, J., & Conesa Conesa, A. (2008). Academic and psycho-socio-familiar factors associated to anxiety and depression in university students. Reliability and validity of a questionnaire. Rev Esp Salud Publica, 82(2), 189-200. https://doi.org/10.1590/s1135-57272008000200005

Beck, A. T., Guth, D., Steer, R. A., & Ball, R. (1997). Screening for major depression disorders in medical inpatients with the Beck Depression Inventory for Primary Care. Behaviour research and therapy, 35(8), 785-791.

Beiter, R., Nash, R., McCrady, M., Rhoades, D., Linscomb, M., Clarahan, M., & Sammut, S. (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. Journal of affective disorders, 173, 90-96. https://doi.org/10.1016/j.jad.2014.10.054

Biddle, S. J., & Asare, M. (2011). Physical activity and mental health in children and adolescents: a review of reviews. British journal of sports medicine, 45(11), 886-895. https://doi.org/10.1136/bjsports-2011-090185

Bruffaerts, R., Mortier, P., Kiekens, G., Auerbach, R. P., Cuijpers, P., Demyttenaere, K., Green, J. G., Nock, M. K., & Kessler, R. C. (2018). Mental health problems in college freshmen:

Prevalence and academic functioning. Journal of affective disorders, 225, 97-103. https://doi.org/10.1016/j.jad.2017.07.044

Clemente, F. M., Nikolaidis, P. T., Martins, F. M. L., & Mendes, R. S. (2016). Weekly physical activity patterns of university students: Are athletes more active than non-athletes? SpringerPlus, 5(1), 1808. https://doi.org/10.1186/s40064-016-3508-3

Cranford, J. A., Eisenberg, D., & Serras, A. M. (2009). Substance use behaviors, mental health problems, and use of mental health services in a probability sample of college students. Addictive behaviors, 34(2), 134-145.

Culbertson, F. M. (1997). Depression and gender. An international review. Am Psychol, 52(1), 25-31. https://doi.org/10.1037//0003-066x.52.1.25

Divin, A. L. (2009). Perceived stress levels and health promoting behaviors among NAIA and NCAA Division I student athletes. Oklahoma State University.

Farabaugh, A., Bitran, S., Nyer, M., Holt, D. J., Pedrelli, P., Shyu, I., Hollon, S. D., Zisook, S., Baer, L., & Busse, W. (2012). Depression and suicidal ideation in college students. Psychopathology, 45(4), 228-234.

Fernández-Rodríguez, C., Soto-López, T., & Cuesta, M. (2019). Needs and demands for psychological care in university students. Psicothema, 31(4), 414-421. https://doi.org/10.7334/psicothema2019.78

Floyd, P. A., Mimms, S. E., & Yelding, C. (2007). Personal Health: Perspectives and Lifestyles (with ThomsonNOW? Printed Access Card). Brooks/Cole Publishing Co.

Gao, L., Li, F., & Gao, X. (2020). Relationship between sleep quality with depression and anxiety symptoms in college students at Tibet Plateau areas. CHINESE JOURNAL OF SCHOOL HEALTH, 42(4), 593. https://doi.org/10.16835/j.cnki.1000-9817.2021.04.026

Hysenbegasi, A., Hass, S. L., & Rowland, C. R. (2005). The impact of depression on the academic productivity of university students. Journal of mental health policy and economics, 8(3), 145.

Ibrahim, A. K., Kelly, S. J., Adams, C. E., & Glazebrook, C. (2013). A systematic review of studies of depression prevalence in university students. J Psychiatr Res, 47(3), 391-400. https://doi.org/10.1016/j.jpsychires.2012.11.015

Jackson-Koku, G. (2016). Beck depression inventory. Occupational Medicine, 66(2), 174-175.

Kelly, W. E., Kelly, K. E., Brown, F. C., & Kelly, H. B. (1999). Gender differences in depression among college students: A multicultural perspective. College Student Journal, 33(1), 72-72.

Kendall, P. C., Hollon, S. D., Beck, A. T., Hammen, C. L., & Ingram, R. E. (1987). Issues and recommendations regarding use of the Beck Depression Inventory. Cognitive therapy and research, 11, 289-299.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., Rush, A. J., Walters, E. E., & Wang, P. S. (2003). The epidemiology of major depressive disorder: results from the National Comorbidity Survey

Replication (NCS-R). Jama, 289(23), 3095-3105. https://doi.org/10.1001/jama.289.23.3095

Lindsey, B. J., Fabiano, P., & Stark, C. (2009). The prevalence and correlates of depression among college students. College Student Journal, 43(4).

Liu, F., Zhou, N., Cao, H., Fang, X., Deng, L., Chen, W., Lin, X., Liu, L., & Zhao, H. (2017). Chinese college freshmen's mental health problems and their subsequent help-seeking behaviors: a cohort design (2005-2011). PloS one, 12(10), e0185531. https://doi.org/10.1371/journal.pone.0185531

Mahroon, Z. A., Borgan, S. M., Kamel, C., Maddison, W., Royston, M., & Donnellan, C. (2018). Factors associated with depression and anxiety symptoms among medical students in Bahrain. Academic Psychiatry, 42, 31-40. https://doi.org/10.1007/s40596-017-0733-1.

Proctor, S. L., & Boan-Lenzo, C. (2010). Prevalence of depressive symptoms in male intercollegiate student-athletes and nonathletes. Journal of Clinical Sport Psychology, 4(3), 204-220. https://doi.org/10.1123/jcsp.4.3.204

Pustivšek, S., Hadžić, V., Dervišević, E., & Carruthers, J. (2019). Risk for eating disorders and body composition among adolescent female and male athletes and non-athlete controls. International journal of adolescent medicine and health, 32(4), 20170190. https://doi.org/10.1515/ijamh-2017-0190

Sorayah, S. (2015). Uji validitas konstruk Beck depression inventory-II (BDI-II). Jurnal Pengukuran Psikologi Dan Pendidikan Indonesia, 4(1).

Storch, E. A., Storch, J. B., Killiany, E. M., & Roberti, J. W. (2005). Self-reported psychopathology in athletes: a comparison of intercollegiate student-athletes and non-athletes. Journal of sport behavior, 28(1).

Wahdi, A. E., Wilopo, S. A., & Erskine, H. E. (2023). The Prevalence of Adolescent Mental Disorders in Indonesia: An Analysis of Indonesia–National Mental Health Survey (I-NAMHS). Journal of Adolescent Health, 72(3), S70.

Wolanin, A., Hong, E., Marks, D., Panchoo, K., & Gross, M. (2016). Prevalence of clinically elevated depressive symptoms in college athletes and differences by gender and sport. British journal of sports medicine, 50(3), 167-171. https://doi.org/10.1136/bjsports-2015-095756

Wong, J. G., Cheung, E. P., Chan, K. K., Ma, K. K., & Wa Tang, S. (2006). Web-based survey of depression, anxiety and stress in first-year tertiary education students in Hong Kong. Australian & New Zealand Journal of Psychiatry, 40(9), 777-782. https://doi.org/10.1080/j.1440-1614.2006.01883.x.

Yang, J., Peek-Asa, C., Corlette, J. D., Cheng, G., Foster, D. T., & Albright, J. (2007). Prevalence of and risk factors associated with symptoms of depression in competitive collegiate student athletes. Clinical Journal of Sport Medicine, 17(6), 481-487. https://doi.org/10.1097/JSM.0b013e31815aed6b

Yusko, D. A., Buckman, J. F., White, H. R., & Pandina, R. J. (2008). Alcohol, tobacco, illicit drugs, and performance enhancers: A comparison of use by

college student athletes and nonathletes. Journal of American College Health, 57(3), 281-290. https://doi.org/10.3200/JACH.57.3.281-290

Zhou, H., Zhang, Y., Han, X., Dai, X., Lou, L., Hou, X., Zhou, C., Liu, Z., & Zhang, W. (2022). Athlete students lead a healthier life than their non-athlete peers: A cross-sectional study of health behaviors, depression, and perceived health status among university students. Front Psychol, 13, 923667. https://doi.org/10.3389/fpsyg.2022.923667