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The Impact of COVID-19 outbreak on the mental wellbeing of student-athletes and non-athlete students in a university in Ghana

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Abstract

Research suggests that major disruptions to one's life can have negative effects on their mental wellbeing. The novel coronavirus disease (COVID-19) pandemic has caused psychological distress in various contexts of human life. Cancellation of sporting events and transition of courses to primarily online platforms can have significant impact on the lives of university student athletes during the COVID-19 pandemic, hence increasing their risk of poor mental wellbeing and loneliness. The present study aimed at determining the mental wellbeing of student-athletes in a certain university in Ghana during the COVID-19 pandemic. This descriptive cross-sectional study recruited a total of 200 participants (102 student-athletes and 98 non-athlete students). Mental wellbeing of participants in terms of depression, anxiety and stress was assessed using the Depression, Anxiety and Stress Scale (DASS-21). Statistical analysis of data revealed significant difference between the mean scores of athletes and non-athletes for all mental health variables under consideration; depression, anxiety and stress ($p < 0.05$), with the athlete group reporting poorer mental wellbeing than the non-athlete group. The results indicated that the pandemic affected student athletes significantly more than the non-athletes. The student-athletes were comparably more depressed, anxious and stressed during the pandemic than their non-athlete counterparts. Findings from the study have implications for the development of policy guidelines by university authorities and other stakeholders to alleviate the potential threat of the pandemic to the mental wellbeing of the student population.

Keywords: COVID-19, mental wellbeing, students-athletes, depression, anxiety

Introduction

The novel coronavirus disease's devastation cannot be overemphasised. The World Health Organization declared the disease as a global pandemic on March 11, 2020 and since then the world has recorded numerous cases and shocking death rates. Aside from the death toll, the coronavirus also placed an undue strain on the mental health of humans, particularly college students^[1].

Measures to slow down the spread of COVID-19 such as social distance, self-isolation of those who have been exposed to the virus, closure of schools and other social centers made life difficult for most individuals, especially the youth. The closure of schools in Ghana was announced when students at the Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi, Ghana, were preparing to write their end of semester examinations. Moreover, student-athletes were in preparation for competition some few weeks after their exams. The onset of the COVID-19 pandemic resulted in a major disruption in the lives of people across the globe due to the shut down of all non-essential services^[2]. The announcement of closure of schools and the ban on sports participation in the country, had some psychological effects on students^[3], especially when these announcements ended with phrases such as "...until further notice" or "...suspended indefinitely".

College students are among those most severely impacted by COVID-19 due to uncertainty regarding educational accomplishment, future prospects, and socio-cultural interactions during college, among other concerns. The impacts are equally felt across populations, and especially in socioeconomically deprived communities and individuals employed as essential workers.^[4]

Students around the world saw a surge in anxiety, depressive moods, low self-esteem, psychosomatic issues, substance misuse, and suicidality even before the epidemic [5, 6]. Thus, to deal with the effects of the condition on their physical and mental wellbeing, students might require additional resources and services. A study by Owusu-Fordjour *et al.* [7] revealed that, during the COVID-19 pandemic Ghanaian students found it very ineffective to study from home and it was difficult for parents to either supervise or assist their wards with home learning without any complications. The inability of students to meet in school, study together physically as peers, and student-athletes meeting on the pitch to play as teammates could result in loneliness.

Loneliness was found to exacerbate mental health problems in students and a major predictor of anxiety, stress, and depression [8]. Loneliness has increased in the general population since the outbreak of COVID-19, particularly among younger people [9, 10]. Brooks *et al.* [11] surmised that the advent of the pandemic has occasioned a lot of restrictions where students are confined to their residences with little to no direct human interaction. Humans are social creatures, and as such, social interactions are where we perform at our best. Many students have experienced mental and physical exhaustion as the pandemic persists since there are less activities to focus their mental and physical efforts on [12]. According to Brooks *et al.* [11], individuals who experience loneliness have a different immune system than healthy individuals and are therefore more prone to illness. Anxiety, depression and stress are some of the major factors contributing to mental health problems among college students [13]. Moreover, the rise in mental health problems as a result of the COVID-19 pandemic has most of its root cause from anxiety, depression and stress [14].

Mental health problems are of a public health concern. The COVID-19 pandemic suddenly brought some psychological stress, socioeconomic challenges, disturbance in the usual way of life of people especially the young, and the painful loss of loved ones. This poses a serious threat to the mental health of especially young students who have never experienced such a global catastrophic event in their lives. Students who also double as athletes have to deal with the adverse consequences of the pandemic on their lives due to the cancellation of scheduled sporting events and transition of courses to primarily online platforms which they are not used to prior to the onset of the coronavirus disease. Given these implications for student-athletes, the effects that the pandemic has had on their mental wellbeing is worth investigating. To the best of our knowledge there has never been any study reported from the Sub-Saharan Africa region on the impact of COVID-19 on the mental wellbeing of athletes. Perspectives from this region will contribute to the growing literature and discussion on mental wellbeing among athletes. Additionally, the understanding of the subgroups who may be most susceptible to the amalgam of the negative psychological effects of the COVID-19 pandemic may help with targeted treatments, effective therapy, and coping stratagems for people who are most at risk.

The insight gained from this study is relevant, as it is hoped to assist in understanding how student-athletes and their respective institutions can be better prepared and supported both now and in future pandemics. Therefore, in the current study, we investigate the psychological impact of COVID-19 on the mental wellbeing of student-athletes and non-athletes.

Materials and Methods

Study design and participants

A cross sectional study design was employed for this study to assess the impact of the coronavirus outbreak on participants' mental wellbeing. A total of 200 participants were recruited for this study, including 102 student-athletes (57 males and 45 females) and 98 non-athlete students (51 males and 47 females), randomly selected from KNUST sports teams and the six colleges of the university.

The inclusion criteria for the study were that participants must be students of KNUST, who have spent at least one academic year in the university, student-athletes should have at least joined and played for the university sports team in a competition, participant must not be already diagnosed with any mental disorder and must not be on any mental disorder medications.

After obtaining ethical approval from the researchers' institutional ethics review board, permission was sought from the director of sports at the KNUST to recruit student-athletes, through a letter explaining the aims, objectives and potential benefits of the study. To minimize the risk of COVID-19 infection, data was collected through online survey platform using Google forms. Sporting associations publicly shared a link to the survey via their Whatsapp platforms. Likewise, non-student athletes from various colleges who volunteered to participate in this study received the link to the survey via various student association Whatsapp platforms. Upon opening the survey, respondents were provided with a specific question explaining the purpose of the survey and seeking their consent to which if they responded 'No', the survey was terminated immediately. Participants were assured of confidentiality and their ability to withdraw from the study at any moment before or during the data collection. All information gathered during the study was treated with strict confidentiality and anonymity.

Instruments

Demographic data of participants including age, gender, year of student, and type of sports, were obtained. The Depression Anxiety Stress Scale (DASS-21) [15] was employed to assess the emotional impact on the participants due to the COVID-19 outbreak. The DASS-21 is a set of three self-report subscales designed to measure the emotional states of depression, anxiety and stress through 21-items. The participants had to respond to items on a 4-point Likert-type scale ranging from "did not apply to me at all" [0] to "Applied to me very much" [3]. Sample items included; I find it hard to wind down (stress), I was aware of dryness of my mouth (anxiety) and I couldn't seem to experience any positive feeling at all (depression). The total score of depression subscale was subdivided into normal (0-9), mild (10-12), moderate (13-20), severe (21-27), and extremely severe depression (28-42). The total score of anxiety subscale was subdivided into normal (0-6), mild (7-9), moderate (10-14), severe (15-19), and extremely severe anxiety (20-42). The total score of stress subscale was subdivided into normal (0-10), mild (11-18), moderate (19-26), severe (27-34), and extremely severe stress (35-42). The present study recorded a Cronbach's alpha value of 0.89 which indicates high reliability of the scale.

Statistical Analysis

Statistical analysis of data was done using IBM SPSS version 26. Descriptive statistics (percentages, mean and standard deviation) was used to analyze the demographic data of participants. Comparative mean statistics using independent

sample T-test was performed to compare the differences in the mean scores between student-athletes and non-athlete students. Statistical significance, p was set at 0.05.

Results

Participants of this study included 200 students from the Kwame Nkrumah University of Science and Technology Kumasi, Ghana. Results on participants' demographic information are presented in Table 1 below. 102 of the participants (males =57; females = 45) were student-athletes with the average age of 21.40 years old (SD = 1.92). Most of these athletes were second year and third year students (35.3%; 32.4%) respectively. There were 98 non-athlete participants in this study (males = 51; females = 47) with their

average age of 21.65 years old (SD = 2.08). Unlike the athletes, most of their non-athlete counterparts were at their third and final academic year (27.6%; 39.8%) respectively. Among the non-athlete group, the College of Health Sciences had the most representatives (22%), with the rest of the colleges having fairly equal representations. Majority of the athletes were from the Humanities and Social Sciences, Art and Built Environment, and Health Sciences, representing 12%, 11%, and 10% respectively. The college of Agric and Natural Resources had the lowest representations of both athletes and non-athletes. Among the athletes, 85.3% were in team sports representing the majority and 14.7% were in individual sports. Participants' demographic characteristics are represented in table 1.

Table 1: Demographic characteristics of participants.

Variable	Athletes (N=102)	Non-athletes (N=98)
Age	21.40 ±1.92	21.65±2.08
Gender		
Male	57	51
Female	45	47
Year of study (%)		
First year	13.7	17.3
Second year	35.3	15.3
Third year	32.4	27.6
Fourth year	18.6	39.8
College (%)		
Agric and Natural Resources	5.0	4.0
Art and Built Environment	11.0	5.5
Humanities and Social Sciences	12.5	6.0
Engineering	6.5	4.0
Health Sciences	10.0	22.0
Science	6.0	7.5
Type of sports (%)		
Team sports	85.3	-
Individual sports	14.7	-

Table 2 shows the mean comparison of mental health variables scores between athletes and non-athletes. There was a statistically significant difference between the mean scores

of athletes and non-athletes for all mental health variables; depression ($p=0.01$), anxiety ($p=0.00$) and stress ($p=0.00$).

Table 2: Statistical distribution of anxiety, depression and stress scores between athletes and non-athletes.

Variable	Athlete	Non-athlete	Mean diff.	SED	T-value	P-value
	Mean ±SD			(95% CI)		
Depression	10.54±5.17	8.34±6.84	2.20	0.86(0.52-3.89)	2.57	0.01
Anxiety	10.28±4.66	7.80±6.11	2.48	0.77(0.97-3.99)	3.24	0.00
Stress	10.71±5.10	8.66±5.79	2.35	0.77(0.83-3.77)	3.05	0.00

Discussion

The COVID-19 pandemic has had some serious consequences across various sectors of human life including health, education, socioeconomics and culture [16]. Mental health in particular is one aspect of health that was greatly affected by this catastrophic pandemic [14]. Due to the closure of schools and the ban on social activities by governments and regulatory bodies, students are one of the populations that were most affected psychologically [3]. The aim of this study was to access the impact of the COVID-19 outbreak on the mental wellbeing of student-athletes and non-athletes.

Comparing the states of depression, anxiety and stress between athletes and non-athletes, this study revealed significant differences among all three variables. The student-athletes were significantly more depressed, anxious and stressed than the non-athletes with a total mean score of 10.54 vs 8.34 for depression, 10.28 vs 7.80 for anxiety and 10.71 vs 8.66 for stress. However, the effects of these results are not

similar, the non-athlete group were within the normal range of depression and stress scores, while being mildly anxious. On the other hand, the athlete group were mildly depressed, moderately anxious and mildly stressed.

The relative increase in the mental health problems of student-athletes in this study could be due to the fear of uncertainty as a result of the pandemic. The student-athletes did not know only when they were going back to school, but also when they would return to training and competitions. These athletes had trained over the course of the semester, were prepared and set their individual goals for the competitions ahead before the unfortunate onset of the pandemic. The fear of losing form due to detraining and not achieving their set goals could result in increased anxiety among the athlete group.

Moreover, the inability to have access to training equipment and facilities, train as a team and receive training instructions from coaches could make training at home even much more

difficult for these athletes. Team sports athletes were the most represented in this study, covering 85.3% of the total participants, and the relationship between these players is more like a family with a specific goal. Student-athletes typically spend over 20 hours per week training, competing and traveling when in season, and in many cases they have to attend mandatory study classes as well [17,18]. Given the significant amount of time spent participating in sporting activities, it is likely that student-athletes have minimum time for social interactions with people outside the sport domain [19]. A study by Stander *et al.*, [20] revealed that amongst 235 South African student-athletes, strong teammate relationships had the potential to enhance psychological wellbeing by increasing enjoyment and performance. Therefore, being away from each other and without playing the game they love could also explain the relatively high mental health problems among the athlete group. In contrast to the findings of this study, exercise and team sports especially is shown to improve mental health [21], while increasing team cohesion and lowering rates of burnout due to the support team members receive from one another [22,23]. However, other studies have reported high prevalence of mental disorders among student-athlete population. For instance, Davoren and Hwang [24] compared the results of student-athletes versus non-athletes and discovered that 79% of student-athletes reported having felt anxiety and 49% felt depressed in the last 12 months. Correspondingly, the present findings could be due to the fact that, these young athletes were experiencing a global pandemic for the first time, and it happened at a time when they had already prepared for competitions ahead. Studies have revealed that athletes who are faced with non normative transitions such as major life events mostly report poor mental wellbeing [25, 26]. Coupled with the lower satisfaction associated with students' online class sessions [27], there is no doubt that these experiences can have a negative impact on the mental wellbeing of the student-athletes.

We acknowledge some limitations in our study. With about 85% of the participants representing team sports, caution must be exercised when generalizing findings to the entire student-athlete population of the university. Future studies could involve equal representation of both team and individual sports in order to ensure a wide and more accurate generalization of findings. The study relied heavily on the use of self-report measures which has led to under-reporting of disorders in the past due to the stigma associated with mental health in sport [28, 29]. However, this risk was minimized by ensuring participant anonymity throughout the study, hence making under-reporting of symptoms very unlikely. Although this study gains some strength by comparing results of student-athletes with non-athlete students in real time as the pandemic was in effect, it offers a unique opportunity for future studies to examine the mental wellbeing experiences of the athletes post pandemic.

Conclusion

This research contributes to the growing body of literature on sports participation and mental wellbeing by assisting our understanding of how the COVID-19 pandemic affected the mental wellbeing of student-athletes. Using the DAS-21 scale to assess the impact of the COVID-19 outbreak on the mental wellbeing of KNUST student-athletes and non-athlete students, this study revealed that the pandemic affected student-athletes significantly more than the non-athlete students. The student-athletes were comparably more depressed, anxious and stressed during the pandemic outbreak

than their non-athlete counterparts. This could be related to the fact that before the pandemic outbreak, the athletes had prepared for competitions few weeks ahead. Exercise and sports participation is good to improve mental health [21], however, during periods of uncertainties especially when competitions are just few weeks ahead could significantly affect the mental wellbeing status of athletes.

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