

# Correlational Analysis between Mental Health and Psychomotor Performance amidst Pandemic: A Cross-Sectional Study

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## Abstract

Psychomotor performance among basic physical education students is a crucial aspect that needs to be addressed amidst COVID-19 pandemic. The disruptions, changes and consequences given by this pandemic had caused students' mental or psychological state to be disturbed which in turn, affects psychomotor performance among basic physical education collegiate students. Amidst the pandemic, there is an increased interest on how mental health problems among collegiate students were being affected due to sudden changes in the perspective of clinical field, surgeons and athletes. What remains to be explored, however, is how students' mental health was affected by this pandemic which in turn influence their psychomotor performance in the field of physical education. Moreover, the direct effect of mental health problem to psychomotor performance is yet to be explored. To address this gap, this study examined the relationship between mental health and students' psychomotor performance. Quantitative approach, specifically correlational analysis, was used to analyze data from 500 respondents coming from one of the Universities of Mindanao, Philippines who were enrolled in basic Physical Education subject. Bivariate regression analysis assessed the relationship between mental health and psychomotor performance. It was found that the unstandardized beta coefficients between mental health in terms of psychological distress, major depression and generalized anxiety and psychomotor performance with the p-value of 0.000, 0.000 and 0.002 respectively were statistically significant, which means that mental health problems had significant direct effect on psychomotor performance. Therefore, this study had found that mental health problems directly influence psychomotor performance of basic physical education students.

Keywords: Mental health, Performance Psychology, Psychomotor Performance, Physical Education

## Introduction

The World Health Organization classified the public health emergency caused by COVID-19 as a pandemic, causing significant changes (Takeda et al., 2020) in college student's daily activities (Lee, 2020). In response to this pandemic, several countries had implemented safety measures such as school closures (Viner et al., 2020; Van Bortel et al., 2016), social distancing (Lancker & Parolin, 2020), and classes are moved to synchronous home-based learning (Golberstein et al., 2020) in order to respond to the novel coronavirus in an effort to flatten the curve (Restauro & Sheridan, 2020). Although these changes are requisite to deal with the spread, it is accompanied by certain unintended negative outcomes (Mackolil & Mackoli, 2020) and psychological consequences among college students (Zhai & Du, 2020) such as anxiety (CNN, 2020; Kaparounaki et al., 2020; Zhou et al., 2020), depression (Kaparounaki et al., 2020; Zhou et al., 2020) and distress (Zhai et al., 2020).

Moreover, students are the most helpless against the situation's impacts, as they are compelled to remain in their residence for stretched out periods (Jiao et al., 2020), having an impromptu break (Ojetunde et al., 2020), disruption to academic activities in school (Azzahra, 2020), and university closure (Van Bortel et al., 2016) which causes negative psychological consequences among college students (Zhai & Du, 2020). Furthermore, such environmental conditions have been escalating and threatening the welfare of everyone and leads to a spectrum of psychological consequences (Liu et al., 2020) and collegiate mental health issues (Auerbach et al., 2016) and eventually can have a negative impact on learning condition particularly physical or psychomotor performance (Hiremath et al., 2020).

Psychomotor performance or motor aspect is the result of learning success through skills closely associated with accomplishments of psychological ability and emotional aspects (Harist, 2020) that shows specific actions (Bali & Mustrifah, 2020). According to the findings to Lenka & Radmila (2021), it appears that Physical Education is one of the subject areas that focuses on holistic or overall development and one aspect is the students' psychomotor performance (Lenka and Radmila, 2021) which was assumed to be affected by psychological state or cognitive condition in the current study. Performance psychology theory supports that psychological factors or mental health state caused by environment-setting pressure influence optimal human or physical performance (Cotteril, 2017). In addition, Stewart's performance psychology theory claims that the mental health state of the students

such as anxiety, stress, depression and all other emotions provides tension to one's performance goals striving for competence or even excellence. Furthermore, Dr. Gordon emphasized that the individual's thoughts, feelings, beliefs and attitude or one's psychological condition can positively or negatively affect the biological functioning or physical performance. In other words, minds can affect how our physiological aspect works or perform mind and body connection (Gordon, 2016).

Numerous studies only focus on how performance or physical activity is associated with mental health issues or problems which are being heightened and emphasized in their limitations addressing the influence of physical activity towards psychological state (Jimenez-Pavon et al., 2020; Wolf et al., 2021; Ayllon et al., 2019). There are also several studies who examines the influence of mental health status to psychomotor performance but among dental clinical students (Alrashed et al., 2021), major depressive disorder patients (Kertzman et al., 2020), nursing students (Alosaimi, 2021), surgeons (Arora et al., 2019), and athletes (Wilczynska, 2019; Chang et al., 2019; Paul et al., 2012) and there were no researchers yet who examined the correlation between mental health and psychomotor performance among service Physical Education students. Thus, to the authors' knowledge and thorough research, there is no study to date which examines correlation between mental health and psychomotor performance among service Physical Education students' particularly in Mindanao, Philippines. Present study intends to examine the influence of mental health towards students' psychomotor performance in service Physical Education classes to address this gap.

## Methodology

In this study, the researcher used a quantitative approach, specifically the descriptive correlation in analyzing and assessing the influence of mental health problems such as (psychological distress, major depression, and generalized anxiety) towards students' psychomotor performance in Physical Education classes. No variables were manipulated in this study. The respondents of the study were coming from one of the Universities of Mindanao, Philippines who were enrolled in basic Physical Education as their minor subject in the Department of Physical Education Academic Year 2021-2022 first semester. Simple Random sampling was used of which the investigators/researchers believe that the target respondents possessed

the necessary information about the population where the data was obtained. The sample size was five-hundred (500) which perfectly represents the population of Five thousand and sixty (5,060) PED001 and PED003 basic physical education students. Psychological distress was evaluated using the Kessler Psychological Distress Scale (K10; Kessler et al., 2002). K10 has received ample support of good psychometric properties (Fassaert et al., 2009; Pereira et al., 2019; Sampasa-Kanyinga, Zamorski, and Colman, 2018). This tool has a Cronbach alpha of 0.932 in this study. Depression symptoms were measured using the Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001). PHQ-9 is a nine-item self-report scale (e.g., –little interest or pleasure in doing things”) that assesses depressive symptoms during the past two weeks. PHQ-9 has demonstrated good reliability and validity in various populations (Ayalon, 2012; Dajpratham et al., 2020; Glazer et al., 2018). In the present sample, this scale obtained a Cronbach alpha of .940. Generalized anxiety symptoms were assessed using the Generalized Anxiety Disorder Scale -7 (GAD-7; Spitzer et al., 2006). This tool has been proven to have excellent psychometric properties (Byllesby et al., 2016; Sapra et al., 2020; Toussaint et al., 2020). GAD-7 had an internal consistency of 0.938 in the current sample.

Students' Psychomotor Performance was assessed using the STUDENTS' PSYCHOMOTOR PERFORMANCE SCALE – REVISED (Rahman et al., 2016). SPPS-R comprised 10 items (e.g., –able to perform physical activities, accomplish any physical tasks, identify techniques to how to execute movement) with five possible responses (1 = totally disagree to 6 = totally agree). This questionnaire had undergone reliability testing (pilot testing) by a certified statistician to assure its accurateness and appropriateness. This tool has been proven to have an excellent reliability with a Cronbach alpha of .929 in the present study. Using a cross-sectional design, a packet of questionnaires was used to collect information on the respondents' mental health status and psychomotor performance in Physical Education classes. Respondents in the present study were 18 years old and above enrolled in basic physical education subject in the 1st semester AY 2021-2022. Characteristic that would possibly contaminate the outcome of the study was the honesty and bias of the respondents' responses. This procedure was established to ensure the systematic flow of gathering the data to attain the goal of the study and address its gap stated in the statement of the problem. The data were collected using online platform through Google form. All respondents were given an informed consent that was provided in the first part of the packet prior to answering the rest of the scales. The

informed consent includes the general description and objectives of the study, participant's right to withdraw, and clause on data anonymity. The data gathered were carefully classified, tabulated and subjected to statistical treatment for analysis and interpretation of the findings:

Bivariate regression Analysis is a set of statistical methods used for the estimation of relationships between a dependent variable and one or more independent variables. It can be utilized to assess the strength of the relationship between variables and for modeling the future relationship between them. In determining the effect between the independent variable(s) and dependent variable(s), one has to consider the beta coefficient. An unstandardized beta coefficient compares the strength of the effect of each individual independent variable to the dependent variable. The higher the absolute value of the beta coefficient, the stronger the effect. In this study, it was used to determine the total effect between mental health (IV) and psychomotor performance (DV). As such, mental health symptoms (psychological distress, major depression, and generalized anxiety) were treated as criterion variables while psychomotor performance in Physical Education classes was the outcome variable. The PROCESS macro for SPSS (Hayes, 2012) was utilized to perform the analyses. The level of statistical significance was set at  $p < 0.05$ . Statistical analyses will be performed through the SPSS Package 26.0.

In order to be certain that the procedures as well as ethical considerations followed in this study, the following steps were done: Prior to the data gathering, the school of graduate studies – college of education have required the researcher to fill up the – Application for Ethical Approval of Research Proposal where it asked about your research details, prospect participants including the considerations of the selection, sample details and ethical matters which includes the new format of informed consent for the participants. Then it was sent to the College of Education Dean's Office for an assessment, days after there were substantial suggestions and it was complied. After the approval, a letter seeking permission to conduct the study was submitted for approval. The chairperson has signed and permitted the researcher to conduct the study. The documents signified that the study was duly recognized by the program, college and institute. The approved letter was then forwarded to all Physical Education Faculty members in one of the University of Mindanao, Philippines which allowed their students to answer the survey, with the teacher's permission. An online informed consent and data confidentiality was duly presented and approved by all respondents in the study. When the analyses and validation were done,

the paper was submitted to the Statistician, then to the panel of examiners and research adviser of the study for careful review of the findings. The revisions suggested by the panel were likewise satisfied before the final submission of the research.

## Results and Discussion

The influence of mental health such as psychological distress, major depression and generalized anxiety towards psychomotor performance among service Physical Education students in one of the University in Mindanao, Philippines. In determining the correlation between the mental health problems and psychomotor performance using bivariate regression analysis, it was found that the unstandardized beta coefficients were statistically significant with  $-0.166$ ,  $0.162$ , and  $0.122$  respectively which means that psychological distress, major depression, and general anxiety had significant effects on psychomotor performance. This implies that students with mental health problems such as psychological distress, major depression and generalized anxiety influence their psychomotor performance in Physical Education class. Hence, mental health problems such as psychological distress, major depression and generalized anxiety significantly influence psychomotor performance.

It shows that Service Physical Education students felt tired, nervous, anxious, worried, hopeless, depressed, sad, and worthless in the past four weeks which affects their psychomotor performance in their Physical Education. The result means that students with distress, depression and anxiety greatly influence their abilities in performing psychomotor tasks in their Physical Education subject; on the other hand, students with good mental state did not influence their psychomotor tasks. As supported by the World Health Organization (WHO), mental health is a way of thinking where an individual recognizes his or her abilities as an individual, strategies and techniques in coping reality problems and challenges, can do things in a creative and productive manner and be able to contribute to his or her residence or community (WHO, 2002) while psychomotor is anything that requires physical motion or movement such as physical coordination in utilizing skills (Oktavia et al., 2019) that is concerned particularly in working or moving that involves limbs (Ridwan, 2018). Hence, psychomotor can also mean the ability of an individual to make any motions or physical movements

he or she understands something and these movements serve as a response from that success learning (Haristo, 2020).

There are lots of psychological consequences and outcomes that have been observed during this COVID-19 pandemic particularly in higher education. The study of Kapaouiaki et al, found out that there was an increase of the prevalence of mental health problems of students; 42.5% for anxiety and 74.3% for depression caused by the COVID-19 pandemic (Kaparounaki et al, 2020). The study of Salary et al during the COVID-19 pandemic reveals that an individual with higher level of education particularly college students had greater levels of distress, worry, depression and anxiety (Salari et al., 2020) which influences how these students learn or perform psychomotor skills in their academic tasks, and an understanding of the students' prior knowledge and experiences is essential as facilitators or educators move forward for the betterment of the education system (Aldridge & McQuagge, 2021).

Report published by the Royal College of Psychiatrists which aims to assess the mental health of students in higher education in the UK emphasized the significant association of mental disorders and academic performance (Royal College of Psychiatrists, 2021). Namdar et al (2013) also highlighted in their study that academic performance is strongly associated with mental health. Another study of Ahmadi, Z. has revealed that students who are emotionally depressed and stressed and suffering from anxiety, seem to have lower educational performance or tasks. This study concludes and claims there is a strong causal association which means that mental health disorder or poor mental health leads to poor academic performance (Ahmadi, Z., 2007).

Participants in the study of Aldridge and McQuagge (2021) described the experiences of being stressed and depressed as a student during this COVID-19 pandemic. According to the respondent, isolation, restrictions, quarantine guidelines imposed by the government, and online learning were challenging. Participant 1 said: –It's impossible to build a relationship [during COVID] . . . I think it's been really, really depressing to not know people, I think that are one of the saddest parts! (Aldridge & McQuagge, 2021). Hence, this pandemic shows that the learning process is not easy given that psychological consequences affect how students' perform and accomplish physical tasks during the COVID-19 pandemic. In addition, recent studies have found that during the COVID-19 pandemic, education levels is one of the predictor of anxiety, depression and stress level of an individual (Moghanibashi-Mansourieh, 2020; Wang et al., 2020) which means that college students are more anxious towards this pandemic compared to the lower education levels.

According to the study of Zhang which was conducted in China, students in higher education enrolled in universities are prone to mental symptoms because these groups are more aware and knowledgeable about the situation which includes the fear of having this virus and academic workload to accomplish (Zhang & Ma, 2020).

Theories suggest that schools and universities must promote mental health awareness during this COVID-19 pandemic which will bring up their positivity and resilience amidst this challenging situation (Arslan, 2020; Prime et al., 2020). Therefore, mental health must be valued bringing the principles of positive psychology into concept in order to avoid its consequence particularly in academic tasks. This emphasizes that students' positivity during COVID-19 pandemic plays a key role for the promotion of positive education which will cultivate psychomotor performance at its peak. Therefore, the null hypothesis which states that mental health symptoms (psychological distress, major depression, and generalized anxiety) are not significant predictors of psychomotor performance in Physical Education Classes was rejected.

Conclusion and Recommendations to the best of the authors' knowledge and thorough research, the present study was the first to examine the relationship between mental health (psychological distress, major depression and generalized anxiety) and psychomotor performance among service Physical Education students in one of the Universities in Mindanao, Philippines. This study provided a significant contribution to the existing literature and studies regarding the psychomotor performance of the students in their Physical Education subject. One is the study of Begam and Tholappan that has reviewed the psychomotor performance which they call –the absent domain. This means that there were only rare studies examining the psychomotor performance but not among Basic Physical Education students. The findings of the study provided a great opportunity to the concerned individuals and organizations to address the mental health problems faced by college students during this pandemic affecting their psychomotor performance. Mental health problems such as psychological distress, major depression and generalized anxiety were significantly associated with psychomotor performance among service Physical Education students. There were few studies that have linked mental health problems to other areas but not towards psychomotor performance among Physical Education students where in fact, this subject is the only school subject that enhances and develops the overall psychomotor performance of the students. In addition, no studies examined the influence of mental health to psychomotor performance particularly among Physical Education

students particularly in one of the Universities of Mindanao, Philippines. The current study contributed to lack of literature concerning the relationship between mental health and psychomotor performance among service Physical Education students. The present study has found that Service Physical Education students suffered from mental health problems during this pandemic namely psychological distress, major depression and generalized anxiety which significantly influence their psychomotor performance in their Physical Education subject. Therefore, this study has found that mental health problems directly influence psychomotor performance of basic physical education students.

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