

# Investigation of the Association of Interpersonal Skills of Exercise Teachers on the Mental Health, Competitive Trait Anxiety, and Perception of Athlete Students' Success

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## Abstract

**Background:** As the team leader, a coach is a strong creator, who paves the way for the athletes' progress and provides a large portion of the required conditions for the victory and success. The present study aimed to investigate the association between interpersonal skills of exercise teachers and the mental health, competitive trait anxiety, and perception of the athlete students' success in the 30th round of sports competitions of female students across Iran.

**Method:** The current research was a cross-sectional study. It was conducted from August 11, 2019 to August 16, 2019. The statistical population of the study consisted of all the athlete students participating in the 30th sports competition round of female students from all over Iran (700 people). The age of the participants ranged from 12 to 17 years ( $14.25 \pm 1.72$ ). The questionnaires were distributed in a community of all student-athletes among 300 students via purposeful and accessible method. Finally, out of the distributed questionnaires, 264 questionnaires were collected during the research. The data were collected through a questionnaire. Data analysis was also performed utilizing SPSS and AMOS software. The data obtained through the questionnaires were analyzed using Pearson's correlation test based on the structural equation modeling.

**Results:** The results indicated a significant positive relationship between mental health of the athlete students and interpersonal skills of exercise teachers ( $r=0.235$ ,  $P=0.001$ ), perception of the athlete students' success and interpersonal skills of the exercise teachers ( $r=0.280$ ,  $P=0.001$ ), perception of success and students' mental health ( $r=0.146$ ,  $P=0.005$ ), and perception of the athlete students' success and their competitive trait anxiety ( $r=0.193$ ,  $P=0.002$ ). Furthermore, there was a significant negative relationship between competitive trait anxiety of the athlete students and interpersonal skills ( $r=-0.322$ ,  $P<0.001$ ) and their competitive trait anxiety and their mental health ( $r=-0.296$ ,  $P=0.001$ ). The model indices also showed a good fit. The  $P(\chi^2)$  was equal to 0.313 and the RMSEA was estimated to be lower than 0.1 (0.07). The other model fit indices, such as the TLI, NFI, CFI, IFI, RFI, and CMIN/DF, with estimated values of 0.92, 0.951, 0.94, 0.94, 0.911, and 1.45, respectively, all indicated the goodness of fit and confirmed the research model.

**Conclusion:** According to the research findings, it could be suggested to provide further essential communication and coaching training for exercise teachers to have more influence and control over athlete students while providing tactical and technical guidance during the competition and training.

**Keywords:** Perception of success, Competitive trait anxiety, Mental health, Exercise teachers, Interpersonal skills, Students

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## 1. Introduction

Mental health is one of the most fundamental social concepts and important issues, which have recently attracted a great deal of scientific attention. Mental health is believed to have an effective role in preventing the creation or progression of cognitive, emotional, and behavioral disorders in human beings (1). The mental health dimensions include physical symptoms, anxiety, sleep disorders, social dysfunction, and depression; the possible disorders in these components have negative impacts on the psyche of people (2). One of the ways introduced by psychologists for preventing and treating

mental issues is the role of physical activity in mental health. Public exercise is a type of regular and effective physical activity that is pursued with the aim of creating joy, vitality, and health in different communities; it forms social relationships and has positive results (3).

One of the psychological aspects of sports psychology is the anxiety. Anxiety can be observed as an increased degree of independent arousal associated with emotions and mental perception (4). The term competitive trait anxiety refers to the changes in athletes' mental state during the competition, which are associated with both social problems and physical hazards. It is generally referred to as the change in arousal and emotional state,

which occurs under competitive conditions and like other types of anxiety; the competitive trait anxiety involves both biological and psychological components and is an important factor in an athlete's performance (5). The sports performance and success are highly affected by common sports stressors, such as mental or physical error, pain and discomfort, observation of cheating or opponent success, receiving a penalty from the referee, and a reprimand from the coach. Research findings have illustrated that the inability to effectively cope with sports stress has a negative association on the athlete performance and personal satisfaction and affects sports success as the main goal of athletes, coaches, and researchers in this field (6). Perception of success falls into two main categories. Task-oriented people attribute their successes to the mastery of skills, hard work, and effort whereas ego-oriented ones attribute their progress to the excellence and superiority over others without the need for effort. Therefore, the role of psychologists and coaches is important to teach the importance of task-oriented motivations and try to lead more athletes toward task-orientation and reduce ego-orientation through careful planning (7).

According to the psychologists, human beings are innately social beings and need to communicate and interact with their fellowmen in order to meet the needs of their individual and social life (8). On the other hand, living in a complex society requires people to develop certain skills in order to enable them to appropriately respond to the actions of others (9). One of these skills is interpersonal communication skill, which was initially introduced by Samter and Burleson in 1990 (10). In the meantime, previous studies have reported that the teacher-student relationship is associated with the adolescents' psychological well-being (11). In this regard, it seems that the positive relationship between teachers and students reduces the negative life experiences of students and gives rise to their psychological growth at the same time. In general, previous studies have indicated that teachers' support for students contributes to their mental health (12).

On the other hand, the coach-athlete relationship is a key relationship in the field of sports. This relationship plays an important role in the social and sports development of young athletes (13). The concept of coach-athlete relationship is defined as a situation in which the feelings, thoughts, and behaviors of coaches

and athletes are mutually and casually interrelated (14). The coach-athlete relationship is the basis of the coaching process whose nature determines the mental health, satisfaction, and success of athletes based on the interdependence theory (15).

As the team leader, the coach acts as a strong builder providing the foundation of athletes' progress and also prerequisites for their victory and success (16). As people who are able to understand the athletes, coaches know how to teach athletes to make attempt within the specific limits and rules of a game. Coaching includes several situational characteristics, to the extent that a coach needs to know what special things and how to say them to the athlete (17). The behavior and leadership style of a coach and the way of communication with athletes are important factors that might affect the success or failure of an institution or a team (18).

Research has reported that the effective leadership of coaches reduces the anxiety and increases the mental health, self-confidence, self-efficacy, and success of the players. In addition, examining the relationship between coaches and athletes solves many of the problems between athletes and coaches in sports teams and clubs. For this reason, several studies have emphasized the importance of effective communication between coach and player; accordingly, the quality of this relationship is an important determinant in improving the athlete's performance (19).

According to the research background and studies conducted on the subject under discussion, it could be generally stated that adolescence is a period of growth in life, which can be challenging and stressful from social, emotional, and psychological aspects and therefore, the mental health can be endangered during this period of life (20). It seems that about 50% of all mental health problems, including depression, anxiety, and aggressive behavior begins at the age of 14 (21) and these mental health issues are the urgent major public health issue among the adolescents, whose prevalence have been reported to be about 10-20% worldwide (22). In particular, students face numerous challenges during puberty, which may affect their mental and physical health for a long time. The results of the relevant studies have indicated that the influence of peers in adolescence is more obvious and mental health problems among adolescents are closely related to the interpersonal relationships in school (21).

Based on the results of previously conducted works, it could be also concluded that the appropriate behavior of coaches and certain factors, such as the coach-athlete relationship, are considered as the most important success ones in sports. In addition, the lack of appropriate leadership behaviors in coaching sports teams, specifically toward athletes, can lead to team inefficiencies despite the high amounts of budget spent on the team.

Considering that no research has been conducted on the components discussed in the field of public school sports and no specific conceptual models have been proposed in this regard, the present study aimed to investigate the association between interpersonal skills of exercise teachers and the mental health, competitive trait anxiety, and perception of the students' success in the 30th round of sports competitions of female students across the country.

## 2. Objectives

Therefore, the current study was conducted to analyze the effect of interpersonal skills of exercise teachers on the mental health, competitive trait anxiety, and perception of the athlete students' success. The age of the participants ranged from 12 to 17 years. Based on the arguments above, the current research took into consideration the following hypotheses:

- H1. Mental health of athletes is influenced by coaches' interpersonal skills.
- H2. Competitive trait anxiety of athletes is influenced by coaches' interpersonal skills.
- H3. Perception of athletes' success is influenced by coaches' interpersonal skills.
- H4. Competitive trait anxiety of athletes is influenced by mental health of the athletes.
- H5. Perception of the athletes' success is influenced by competitive trait anxiety of the athletes.

## 3. Methods

Method of implementation, statistical population, and sample of the research: The current work was a cross-sectional study. It is an applied and descriptive-analytical one in terms of the purpose and nature, respectively, and also was conducted using survey method. The research was carried out from August 11, 2019 to August 16, 2019. The data were collected in Shahrood city, Semnan province, Iran. The statistical

population of this study consisted of all the female students participating in the 30th round of student sports competitions across the country. Students' ages ranged from 12 to 17 years. The inclusion criteria were as follows: female students participating as athletes, not spectators, in the 30th round of female student sports competitions across the country, activity in one of the sports of futsal or volleyball, being in the age range of 12 to 17 years ( $14.25 \pm 1.72$ ), being healthy without any history of disease or acute problems. On the other hand, the exclusion criteria included lack of interest in answering research questions and lack of cooperation with researchers. The population consisted of 700 athletes from 31 provinces in the fields of futsal and volleyball, from which the statistical samples were selected via the purposeful and accessible method.

Data collection methods and tools: The data were collected using questionnaires. The questionnaires were employed in a community of athlete students based on simple random sampling. We obtained the verbal informed consent from the participants. The questionnaires comprised 5 sections. They were distributed in a community of all student-athletes among 300 students with the purposeful and accessible method. Out of these distributed questionnaires, 264 were completed, returned, and analyzed.

The first section included two questions related to the grade and sport field of the participants.

The second section consisted of a researcher-made questionnaire used to assess the interpersonal skills of educators from the students' point of view, which was based on the theoretical foundations and the theories of interpersonal communication and teachers' communication skills for students. This research is based on the theoretical foundations of systems theory. Systems theory emphasizes the connections between a group of individuals and the feedback mechanisms by which the individuals mutually influence each other. The systems perspective implies that teacher student relationships are not unidirectional. That is, the teacher's and students' behaviors are mutually and partially determined by each other (23). The questionnaire used in this research is taken from two questionnaires under the following headings: Teacher Communication Behavior Questionnaire (TCBQ) and Questionnaire on Teacher Interaction (QTI). The TCBQ was developed by She and Fisher (24). The Teacher Communication Behavior

Questionnaire (TCBQ) has been used at different levels of education in many countries to measure students' perceptions of their science teachers' communication behavior. The QTI was developed by Wubbels and Levy (25). The Questionnaire on Teacher Interaction (QTI) was developed to map the interaction between teacher and students. The QTI is a questionnaire with questions regarding the behavior of a teacher in the classroom and provides an indication of how they behave. The questionnaire is filled in by the students. These questionnaires have been translated and validated in numerous countries. The TCBQ and QTI have been shown to be valid and reliable tools in all different language versions. In this research, the validity of the questionnaires was confirmed by experts. In several studies, the questionnaires used were the same for both groups of teachers and students. In fact, two forms of questionnaires were created, one for students and the other one for teachers. We focused on the student version.

The third section included the general health questionnaire (GHQ) of Goldberg and Williams (26). This questionnaire is provided in the form of 12, 28, 30, and 60-question forms, among which the 12 and 28-question ones are used both in Iran and in other countries. In this research, the 28-question form was used in the form of four components (questions 1-7 were related to the physical symptoms component, questions 8-14 were related to the component of anxiety and sleep disorder symptoms, questions 15-21 were related to the

social function component, and questions 22-28 were related to the depression syndrome component), where there was a score for each sub-scale and another one for the individuals' total score. The scoring method was such that a score of 0, 1, 2, and 3 was given to options a-d; therefore, the score of each individual in each of the subscales was calculated to be from 0 to 21 and in total, it was presented within the range of 0-84. The scores corresponding to different scales were calculated separately and then added to each other to obtain the total score. In the research by Taghavi (27) and Saatchi and co-workers (28), the face validity of this questionnaire has been approved by professors and experts. In the content validity review, the CVR for each of the questions was reported higher than the value of the Lawshe number and the CVI of the 0.85. Moreover, the reliability of the questionnaire was evaluated and confirmed utilizing Cronbach's alpha (0.89).

Section 4 was devoted to the sport competition anxiety standard (SCAT) questionnaire by Martens and colleagues (29), known as the Illinois competitive questionnaire, which contains 15 3-choice questions (rarely, sometimes, often) associated with an agent. In the research of Arbab and colleagues (30) and Farrokhi and co-workers (31), the face validity of this questionnaire was approved by professors and experts. In the content validity review, the CVR for each of the questions was reported to be higher than the value of the Lawshe number and the CVI of 0.81. The reliability of the questionnaire was also evaluated and confirmed via

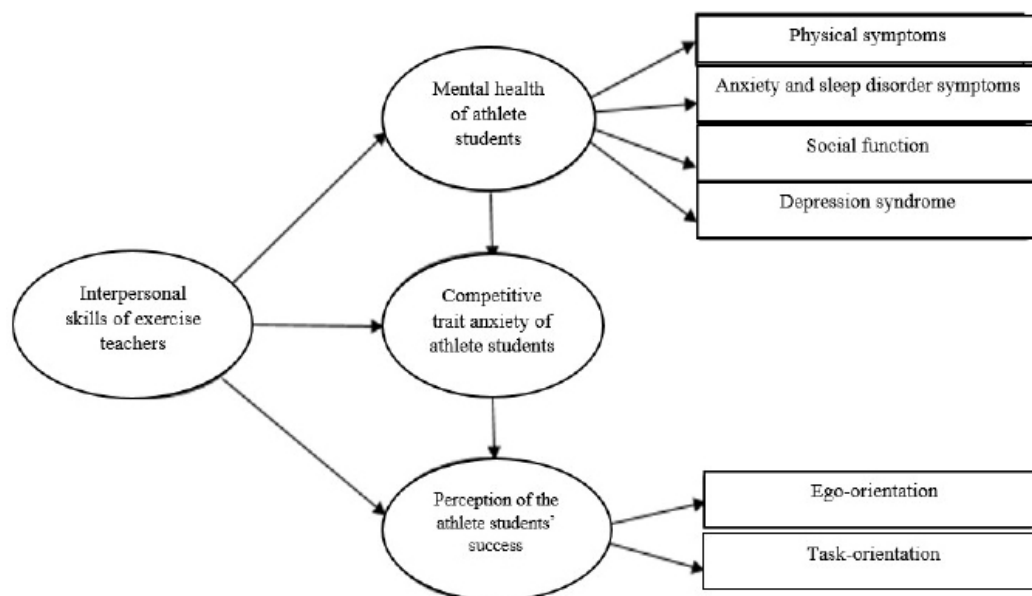


Figure 1: The figure shows the research model.

Cronbach's alpha (0.83). Finally, section 5 deals with the perception of success questionnaire (POSQ) of Roberts and colleagues (32) containing 12 questions in two subscales of ego-orientation (1, 2, 3, 6, 10, 11) and task-orientation (4, 5, 7, 8, 9, 12) based on a 5-point Likert scale from strongly agree to strongly disagree. In the research of Zardoshtian and co-workers (33), the face validity of this questionnaire was approved by professors and experts. In the content validity review, the CVR for each of the questions was higher than the value of the Lawshe number and the CVI of 0.84. Additionally, the reliability of the questionnaire was evaluated and confirmed by Cronbach's alpha (0.86).

Figure 1 represents the research model including all the factors. To test the relationships among the components of the framework, five hypotheses are presented in this section.

Data analysis method: After collecting information through a questionnaire, the data analysis was performed using SPSS and AMOS software. The data obtained through the questionnaires were analyzed utilizing Pearson's correlation test based on the structural equation modeling.

#### 4. Results

The statistical population of this study consisted of all the female students participating in the 30th round of student sports competitions across the country. Students' ages ranged from 12 to 17 years. The inclusion criteria were as follows: female students participating as athletes, not spectators, in the 30th round of female student sports competitions across the country, activity in one of the

the exclusion criteria included lack of interest in answering research questions and lack of cooperation with researchers.

The results obtained from the descriptive statistics of the study indicated that the highest number of athlete students (135 people) were in the middle school while 121 were in the secondary one and eight did not answer this question. Moreover, 152 and 88 students were active in the fields of futsal and volleyball, respectively, and 24 did not answer this question.

Since the main foundation of structural equation models is the correlation matrix, Table 1 presents the correlation matrix between the research variables. The results of Pearson's correlation coefficient indicated a significant positive relationship between mental health of the athlete students and interpersonal skills of the exercise teachers ( $r=0.235$ ,  $P=0.001$ ), perception of the athlete students' success and interpersonal skills of the exercise teachers ( $r=0.280$ ,  $P=0.001$ ), perception of success and the students' mental health ( $r=0.146$ ,  $P=0.005$ ), and perception of the athlete students' success and their competitive trait anxiety ( $r=0.193$ ,  $P=0.002$ ). Furthermore, there was a significant negative relationship between competitive trait anxiety of the athlete students and interpersonal skills ( $r=-0.322$ ,  $P<0.001$ ) and competitive trait anxiety of the athlete students and their mental health ( $r=-0.296$ ,  $P=0.001$ ).

According to the information in Table 2, the model indices showed a good fit. The  $P(\chi^2)$  equaled 0.313, which indicated the goodness of the fit of the model. On the other hand, the root mean square error of approximation (RMSEA), as an important index, was estimated to be less than 0.1 (0.07). In other words, it could be surely stated that the conceptual model of the research is well accepted. Other model fit indices, such as the non-normed fit index or Tucker-Lewis (TLI), normed fit index (NFI), comparative fit index (CFI), incremental fit index (IFI), relative fit index (RFI), and chi-square index, were divided by its degree of freedom (CMIN/DF), with estimated values of 0.92, 0.951, 0.94, 0.94, 0.911, and 1.45, respectively. They all indicated the goodness of fit and confirmed the research model.

As illustrated in Figure 2 and Table 3, the interpersonal skills of exercise teachers had a direct and positive association with the mental health of athlete students (0.20). This means that for each unit of increase in the interpersonal skills variable of exercise teachers, the

Table 1: Correlation between the variables

Variables (Mean ± SD)	1	2	3	4
1. Interpersonal skills (3.55±0.63)	1			
2. Mental health of the athletes (2.77±0.52)	$r=0.235^*$ $P=0.001$	1		
3. Competitive trait anxiety of the athletes (1.89±0.35)	$r=-0.322^*$ $P<0.001$	$r=-0.296^*$ $P=0.001$	1	
4. Perception of the athlete students' success (3.88±0.69)	$r=0.280^*$ $P=0.001$	$r=0.146^*$ $P=0.005$	$r=0.193^*$ $P=0.002$	1

\* $P<0.05$

sports of futsal or volleyball, being in the age range of 12 to 17 years (14.25±1.72), being healthy without any history of disease or acute problems. On the other hand, Int. J. School. Health. 2021; 8(2)



the exercise teachers. Furthermore, the mental health of the athlete students had a direct and negative correlation with their competitive trait anxiety (-0.38). This expresses that for each unit of increase in the mental health variable of athlete students, the variable of competitive trait anxiety decreased by 0.38. Finally, the competitive trait anxiety of the athlete students was found to have a direct and negative association with the perception of success (-0.10); that is, for each unit of increase in the competitive trait anxiety variable, the perception of the athlete students' success decreased by 0.10. The results also showed that the symptoms of anxiety and sleep disorders with a coefficient of 0.90 had the greatest association with the mental health of the athlete students while the self-orientation with a coefficient of 0.97 had the greatest effect on the perception of athletic success.

## 5. Discussion

The behavior and leadership style of exercise teachers, as a coach, and the way they communicate with their athlete students are considered as very important factors that can affect the success or failure of a team. Therefore, the present study investigated the influences of the interpersonal skills of exercise teachers on the mental health, competitive trait anxiety, and perception of students' success. The present findings indicated a positive and significant relationship between the interpersonal skills of exercise teachers and mental health and the perception of the success of athlete student. Additionally, a negative and significant relationship was observed between interpersonal skills and competitive trait anxiety, competitive trait anxiety and mental health, and perception of success and competitive trait anxiety of the athlete students.

Coaches have a great responsibility, which goes beyond winning the competition as they can nurture or destroy an athlete's human potential through the path they choose. A healthy coach uses sport as a vehicle to lead their team players. One of the ultimate goals of a qualified coach is to provide guidance for developing useful life skills. In addition to having a significant effect on athletes, coaches are responsible for a "subculture". Thus, coaches are able to have a broad influence on the society (34).

In a study in 2015, Mazzer and Rickwood examined the coaches' awareness of mental health in youth sports, as well as the perceived role of their breadth and ability

to support the youths' mental health (35). The coaches recognized that the extent of their role helps them to be a useful resource for the youth's mental health through identifying the concerns and promoting the participation in sports. Further mental health education increases the ability of coaches to help athletes' confidence and efficiency, which results in the mental health and athletic experience benefits of young people. Coaches are in a position to have a positive effect on the mental health of the youths and are expected to highly support young people in this way. In a review study by Rice and colleagues in 2016, it was reported that the elite athletes have a significantly higher risk of mental disorders (for example, anxiety and depression) than the public. However, the evidence associated with other mental health areas (for instance, eating disorders, drug use, stress, and opposition) is less compatible (36).

Anxiety is an individual's reaction to a stressful situation and athletes are likely to have a lot of stress in competitive sports related to their performance. Kenow and Williams, in 1999, evaluated the relationship among competitive trait anxiety, basketball players' self-confidence, and their coach's behaviors. They found that athletes with higher competitive trait anxiety and lower self-esteem, rate their coach's behaviors more negatively (37). The results of the study conducted by Cho and colleagues in 2019 illustrated that the athletes' perception of their coaches' behaviors has a significant effect on their sense of competitive trait anxiety, especially in competitive sports (38). The coaching behaviors are not contradictory; in other words, a coach can act in both controlling and supportive ways and affect the performance of athletes and their mental health. Given that controlling the coaching behaviors affects the competitive trait anxiety, according to the present achievements, exercise teachers need to provide less control to reduce anxiety in athletes. This discrepancy between the findings of studies on the association between the interpersonal relationship of a coach and the reduction in athletes' stress could be attributed to the fact that the excessive intimidation and personal control leads to the competitive trait anxiety. Hence, exercise teachers should be provided with the necessary training in communication and coaching and it should be noted that competitiveness is a key component of sports and competitive environments cannot be excluded from the athletic environments. Perception of success is an important factor in assessing and predicting the athletes'

toughness since with the increase in the perception of success, the amount of effort and achievement of the goal is further strengthened in athletes and they show more persistence in the competition. Perception of success allows athletes to maintain their stability as well as efficiency despite the stressors and to think only achieving the goal. To this end, athletes remove any destructive situations and conditions that prevent them from reaching the goal and keep trying hard to achieve it. The present results are in line with those of Sindik and Adzija (39) and Ramzi and Besharat (40). Moreover, no studies were found to be inconsistent with the present research in the field of study.

#### *Research limitations*

Primarily, the effect of the interpersonal skills of exercise teachers on the mental health, competitive trait anxiety, and perception of success was evaluated herein based on the self-reports by athlete students, in which the inaccuracies, stress, and anxiety, due to competitions or their bias, may have led to biased research results. Secondly, the present study was conducted among the athlete students participating in volleyball and futsal competitions and those in other sport fields were not surveyed.

Therefore, our results cannot be generalized to all athlete students in different sport fields. Thirdly, the present study did not consider the association among other variables, such as sports history, mental disorders, and physical problems, which may have affected the results if these factors had also been taken into account.

Ultimately, the current study was limited to the views of the athlete students, yet not the exercise teachers, who were not part of the statistical population of the investigation. This was due to the fact that the researchers could not access the exercise teachers during the competitions and despite making many attempts to get the opinions of some teachers, due to the busy schedule, lack of participation, apathy, anxiety, and stress of the competitions; it was unfortunately impossible to receive their opinions.

Therefore, the authors only examined the opinions of the athlete students. It seems that the present study could have provided a better evaluation if it had also included the exercise teachers. Hence, the researcher faced a relative limitation in this regard. Given the

above-mentioned limitations, it could be suggested to conduct further studies on the present topic considering all these points. Future studies can address this issue from the perspective of exercise teachers, add a contribution to its scientific richness, and highlight new aspects of research in more details.

## **6. Conclusion**

In general, it could be expressed that exercise teachers can maintain and increase the motivation for success and provide better individual and team performance by establishing a friendly relationship with athlete students as players, examining their problems and resolving the disputes between team members. In the meantime, the exercise teachers, as coaches, focus on teaching strengths and weaknesses and improving players' skills through providing technical and tactical guidance during the competition and training as well.

Thus, a warm and secure relationship between these two groups would allow the exercise teachers to have further influence and control over the students, increase motivation, and improve student performance. Consequently, team success through provoking the potential forces would increase motivation. Overall, the findings of this study shed light on the urgent need of schools to improve interpersonal relationships between teachers and students. The present findings generally emphasized the urgent need of schools to strive toward improving the interpersonal relationships between teachers and students.

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## **Ethical Approval**

This research was approved under the ethics code UMIN000043221 from UMIN.

## **Conflict of interests**

The authors declared no conflict of interest.



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