

## Mental toughness and self-confidence of volleyball extracurricular participants: a study of gender differences

Mental toughness and self-confidence of volleyball extracurricular participants: un estudio de las diferencias de género  
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**Abstract.** There are four aspects that need to be considered in a volleyball game, namely: physical, technical, tactical, and mental. The search for better results in sport, regardless of the discipline, pushes many athletes to their physical and mental limits. This study aims to identify differences in mental toughness and self-confidence in volleyball extracurricular participants based on male and female gender, and which one is better. This research is a comparative study. The population in this study were extracurricular volleyball participants in five high schools totaling 154 students (89 male, 65 female) with an average age of 16-19 years selected randomly. Control group, namely men and women totaling 62 students. The instrument used is a questionnaire. Data analysis technique using ANOVA test. The level of statistical significance was set at p-value <0.05. The results of this study found evidence that the mental toughness (F-value of 12.124 and p-value of 0.000 <0.05) and self-confidence (F-value of 17.637 and p-value of 0.000 <0.05) of male volleyball extracurricular participants are better than female, so it is hoped that volleyball coaches can use it as one of the considerations for developing development strategies so that mental toughness and self-confidence are better.

**Keywords:** mental toughness, self-confidence, gender, volleyball

**Resumen.** En un partido de voleibol hay que tener en cuenta cuatro aspectos: físico, técnico, táctico y mental. La búsqueda de mejores resultados en el deporte, independientemente de la disciplina, lleva a muchos atletas a sus límites físicos y mentales. Este estudio tiene como objetivo identificar las diferencias en la fortaleza mental y la autoconfianza en los participantes extracurriculares de voleibol en función del sexo masculino y femenino, y cuál es mejor. Esta investigación es un estudio comparativo. La población de este estudio fueron participantes extracurriculares de voleibol en cinco escuelas secundarias con un total de 154 estudiantes (89 hombres, 65 mujeres) con una edad media de 16-19 años seleccionados al azar. Grupo de control, a saber, hombres y mujeres con un total de 62 estudiantes. El instrumento utilizado es un cuestionario. Técnica de análisis de datos mediante la prueba ANOVA. El nivel de significación estadística se fijó en un valor  $p < 0,05$ . Los resultados de este estudio encontraron evidencia de que la fortaleza mental (valor F de 12,124 y valor p de 0,000 <0,05) y la confianza en sí mismo (valor F de 17,637 y valor p de 0,000 <0,05) de los participantes extracurriculares de voleibol masculino son mejores que las mujeres, por lo que se espera que los entrenadores de voleibol puedan utilizarlo como una de las consideraciones para desarrollar estrategias de desarrollo para que la fortaleza mental y la confianza en uno mismo sean mejores.

**Palabras clave:** fortaleza mental, autoconfianza, género, voleibol

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### Introduction

Schools can be used as a forum to support educational goals achievement (Umi, Marsidin, and Sabandi 2020). Achieving educational goals cannot be separated from the influence of the educational curriculum on extracurricular activities (Setyawan et al. 2024). Therefore, curriculum implementation and development can be done by implementing and developing various extracurricular activities that encourage student achievement or skills in various fields (Setyawan et al. 2024). Extracurricular activities at school are one way to accommodate and develop students' potential while at school (Buckley and Lee 2021). Extracurricular activities are usually carried out outside regular class hours to broaden knowledge, attitudes and skills in various fields, namely sports, science, social sciences, religion and the arts (Setyawan et al. 2024). This will enable students to develop their abilities, skills and attitudes in the school context, providing greater opportunities for relationships outside the classroom, which will lead to better school coexistence (Yusof and Abugohar 2017). In addition, these extracurricular activities that take place in elementary, middle and high schools favor the use of free time, generating support for parents and

guardians who during that period of time are engaged in domestic or work activities (Ortega and Carmona 2022; Soler, Delgado, and Hernández 2022).

One of the extracurricular activities that can be carried out is extracurricular volleyball (Sahabuddin, Herman, and Windiana 2023). Extracurricular activities' impact on competency and skill development, especially in volleyball, is essential (Grgantov et al. 2017). Volleyball, suitable for all age groups and genders, is recognized as a community sport (Mussema, Tadesse, and Melkamu 2021). There are four aspects that need to be considered in a volleyball game, namely: physical, technical, tactical, and mental (Hao 2024). The search for better results in sport, regardless of the discipline, pushes many athletes to their physical and mental limits (Şekeroğlu 2019). In this way, an athlete's performance is affected by physical factors and psychological aspects that play an important role in their performance (Kemarlat et al. 2022; Peng and Zhang 2021). Therefore, the ability to maintain an adaptive and stable psychological state during periods of competition is an important factor for athletes to consider (González-Hernández et al. 2020). In view of this, the relationship between psychological variables and their influence in the sporting context has been the subject of

study for sports psychology (Nogueira, Bara, and Lourenço 2019; da Silva Silva et al. 2022).

One of the mental aspects that volleyball athletes need to have is mental toughness and self-confidence. The search results provide evidence that mental toughness can have a significant impact on an athlete's performance (Aditya et al. 2024). The reason is that experts agree that athletes' mental toughness is a key factor and determines athletes' success on the field (Putra et al. 2024). Mental toughness is defined as the ability to handle pressure, adversity, and stress by overcoming failures and persisting without quitting (Hsieh et al. 2024). It is a psychological resource that helps athletes achieve challenging goals when faced with stressors that make success more difficult (Soundara Pandian et al. 2023). The construct of mental toughness can be defined as a collection of values, attitudes, emotions, and cognitions that are attached to a person and influence that person in responding to and assessing pressure, challenges, and difficulties faced to achieve their goals (Wandik et al. 2024).

Mental toughness is a combination of qualities that enable a person to prepare both physically and mentally to overcome challenging training and competitive situations (Liew et al. 2019). Athletes with mental toughness possess disciplined thinking and remain calm, focused, and energized under pressure or competition; they can trigger positive energy flows even in adverse conditions (Akbar et al. 2023). Mental toughness is consistently cited by athletes, coaches, and sports psychologists as one of the most critical psychological traits associated with success in elite sports (Akbar et al. 2024). Research conducted by Gucciardi, Hanton, and Fleming (2017) shows that mental toughness plays a role in fighting things that have the potential to damage interpersonal style. Thus mental toughness is needed to reduce athletes' mistakes.

Aside from mental toughness, another important aspect for volleyball players is self-confidence (Hao 2024). Someone's success or failure in interacting socially with their environment is determined by how they develop their self-confidence (Moneva and Tribunalo 2020). Because of their confidence, someone can be successful in getting along with others, making friends easily, and succeeding in education or work (Dahlan 2019). Self-confidence is a part of psychology related to belief in an individual's ability to perform a task or job. Success in a task or job can be interpreted as achievement (Ferro et al. 2023). Achievements can be achieved by everyone, one of which is athletes. The results of scientific studies agree that self-confidence can affect an athlete to produce high performance in competing (Latief et al. 2024). The development of self-confidence leads to positive changes in one's environment. Every human has some level of self-confidence, whether it is high or low. Sports can help people develop their self-confidence. Regular exercise can boost self-confidence. Sports and confidence are inextricably linked (Kim and Cruz 2021). Good self-confidence is necessary in sports, and sports can also enhance one's self-

confidence (Lochbaum et al. 2022). A new and healthy sense of self-confidence emerges from within the individual's personality. Confidence is demonstrated not by compensating for weaknesses with strengths, but by the individual's ability to accept himself as he is, understand what he is like, and ultimately believe that he is capable of doing various things well (Astuti et al. 2023). Lack of self-confidence in athletes will not support the achievement of high achievement. Lack of confidence also means doubting one's own abilities and tending to perceive everything from the negative side, so that it becomes a seed of tension, especially when facing matches against players who are equal in strength, so that this tension will end in failure (Siekanska and Wojtowicz 2020).

The psychological ability of mental toughness and self-confidence of each person must be different, and men and women are no exception (Arazeshi, Alikhani Deheghi, and Mohammadi 2019; Zeiger and Zeiger 2018). Physiological differences in men and women are inherent from birth and their functions cannot be exchanged. These physiological differences include the physical, biological, and chemical composition of the body. A study with a sample size of 211 (89 boys and 122 girls) ninth grade students (ages 14 and 15). The results showed that the boys obtained higher mean scores in seven of the eight measured sport psychological skills. Freedom from worry was the only skill that yielded a statistically significant difference, with the boys ( $52.06 \pm 20.27$ ) obtaining a higher mean value than the girls ( $46.17 \pm 20.56$ ) (Kruger et al. 2019). It is generally known that the physical strength of men is higher than that of women. Indirectly, the physical advantages possessed by men affect their athletic abilities. Kalkavan, Acet, and Çakır (2017) added that it allows men to have faster healing than women, so that it also affects the mental toughness of athletes.

There are many cases related to gender dichotomy in sports practices or activities and its relevance to mental toughness in Indonesia. This happens as in social and cultural aspects. In the social aspect itself, such as the perspective of society that women are feminine figures and the lack of achievement achieved by female athletes. Women are always associated with meekness, so their participation in sports is often linked to a body that is too masculine or their sexuality life becomes a public conversation, and there are also not many female athletes who have achieved achievements in the international arena. The cultural aspect itself can be seen from the patriarchal culture that is still deeply rooted in various regions (Murod and Jannah 2021). Research on differences in mental toughness between male and female athletes shows different results. The results showed a significant difference between the mental toughness of male and female gymnasts (Dolly and Chhikara 2017). Research conducted by Beattie, Alqallaf, and Hardy (2017) found no difference in the mental toughness of girls and boys practicing swimming. Sheard, Golby, and Van Wersch (2009) research on the Sport Mental Toughness Questionnaire

(SMTQ) shows different results between male athletes and female athletes, namely male athletes have higher mental toughness scores than women. Research conducted by Newland et al. (2013) also states that men show greater mental toughness than women. This difference in mental toughness is formed due to differences in physiological aspects that affect the psychokogical attributes of both. Different results were proven by research conducted by Sidhu (2018) showing that there were no significant differences in mental toughness between male and female athletes. Likewise, the study of Beattie et al. (2017) found no difference in the mental toughness of girls and boys practicing swimming.

Some research results regarding gender-based self-confidence levels are still relatively limited, and the results are still inconsistent (Frischknecht, Pesca, and Cruz 2016). In addition, there is still a gap based on the results of previous research related to differences in self-confidence between male and female athletes. Taur (2018) in his research found that there were differences in self-confidence between male and female athletes. Jannah (2017) revealed that from other studies related to gender there are differences, because in general, women's predictors are forming their identity, and men are a certain goal. Different results are shown in the research of Nandana, Maksum, and Priambodo (2020) the results show that there are no gender differences related to the formation of self-concept and self-confidence of students who take part in extracurricular pencak silat and non-pencak silat. The existence of gender equality related to self-confidence, because individuals will try to adjust to the situation of a goal, appropriate information, and social comparison. Research by Tanjung, Hidayat, and Hambali (2023) on male and female student-athletes who play basketball have the same self-confidence.

With regard to gender variables in the context of sport, male athletes tend to report lower levels of cognitive anxiety and better perceptions of self-confidence than female athletes. In addition, it is possible that female athletes have higher levels of competitive anxiety compared to males (Silva et al. 2022). However, it remains unclear whether individual characteristics such as the gender of volleyball athletes can influence mental toughness and self-confidence in the context of amateur sport. This study aims to identify differences in mental toughness and self-confidence in volleyball extracurricular participants based on male and female gender, and which one is better. Our hypothesis is that there are differences in mental toughness and self-confidence between men and women.

## Materials and Methods

### Sample

The sample in this study were extracurricular volleyball participants in five high schools totaling 154

students (89 male, 65 female) with an average age of 16-19 years selected randomly. Control group, namely men and women totaling 62 students. The inclusion criteria for students in this study were no disease limitations. All variables obtained were subjective (questionnaire). All participants were selected for the study through an information advisor from the center, read and signed a consent statement before taking part in the study. Participants were fully briefed on the purpose of the study.

### Research Design

This research is a comparative study, where researchers want to analyze differences in mental toughness and self-confidence in volleyball extracurricular participants based on male and female gender.

### Instruments

The Sports Mental Toughness Questionnaire, developed by Sheard et al. (2009) to assess the levels of mental toughness of individuals, comprised three subdimensions: "confidence", "constancy", and "control". The 4-point Likert-type scale consisted of 14 items. The researcher adapted it using the Indonesian language with a validity of 0.743 and a reliability of 0.851. Trait-Robustness of Self-Confidence Inventory (TROSCI). The TROSCI survey includes 8 items, which are ranked by participants on a Likert-type scale with a value of 1 indicating strong disagreement and a value of 9 indicating strong agreement, to measure self-confidence. To score the TROSCI, the item values are summed, after reversing the scores of items 1, 2, and 7, with a maximum possible survey score of 72. The higher the TROSCI score, the higher the respondent's self-confidence (Marks et al. 2022). The researcher adapted it using the Indonesian language with a validity of 0.695 and a reliability of 0.824.

### Statistical Analysis

Data analysis techniques using ANOVA test. The statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 21. The level of statistical significance was set at p-value <0.05.

## Results

The results of descriptive analysis of mental toughness and self-confidence in volleyball extracurricular participants based on male and female gender are presented in the following Table 1.

Table 1.  
Descriptive statistics

Variable	Gender	N	Mean	Std. Deviation
Mental Toughness	Male	89	36.88	2.60
	Female	65	34.62	2.97
	Control	62	35.87	2.94
Self-Confidence	Male	89	52.92	3.01
	Female	65	49.35	5.27
	Control	62	52.44	3.11

Based on Table 1, obtained data on Mental Toughness (Male  $36.88 \pm 2.60$ , Female  $34.22 \pm 2.97$ , Control  $35.87 \pm 2.94$ ) and Self-Confidence (Male  $52.92 \pm 3.01$ , Female  $49.35 \pm 5.27$ , Control  $52.44 \pm 3.11$ ).

#### Normality Test

The normality test uses the Shapiro-Wilk test, namely by looking at the Asymp. Sig (2-tailed) residual variable if the value is above 0.05, it can be said that the data is normally distributed. A summary of the normality test results is presented in Table 2.

Table 2.

Normality test analysis results

Variable	Gender	N	Sig.
Mental Toughness	Male	89	0.200
	Female	65	0.129
	Control	62	0.162
Self-Confidence	Male	89	0.242
	Female	65	0.214
	Control	62	0.188

Based on the results in Table 2, it shows that the data of Mental Toughness (Male p-value  $0.200 > 0.05$ , Female p-value  $0.129 > 0.05$ , Control p-value  $0.162 > 0.05$ ) and Self-Confidence (Male p-value  $0.242 > 0.05$ , Female p-value  $0.214 > 0.05$ , Control p-value  $0.188 > 0.05$ ), which means the data is normally distributed.

#### Homogeneity Test

The homogeneity test is useful to check the homogeneity of a sample. A homogeneous or heterogeneous sample drawn from a population. Univariate test with Levenes test. A test is declared unimodal if the univariate rule p-value  $> 0.05$ . Similar test results are shown in Table 3.

Table 3.

Homogeneity test analysis results

Group	Sig.
Mental Toughness	0.339
Self-Confidence	0.246

Based on statistical analysis of homogeneity tests that have been carried out using Levene Test in Table 3. The calculation results obtained Mental Toughness (p-value  $0.258 > 0.05$ ) and Self-Confidence (p-value  $0.158 > 0.05$ ). This means that the data group has a homogeneous variant. Thus the population has a similar variant or homogen.

#### Hypothesis Test Results

The hypothesis in this study was tested using ANOVA test. Based on the results of the analysis obtained data in Table 4.

Based on the analysis results in Table 4, it shows that:

The Mental Toughness variable obtained a F-value of 12.124 and a p-value of  $0.000 < 0.05$ , indicating that there is a significant difference in Mental Toughness between male and female volleyball extracurricular participants.

The Self-Confidence variable obtained a F-value of 17.637 and a p-value of  $0.000 < 0.05$ , indicating that there is a significant difference in Self-Confidence between male and female volleyball extracurricular participants.

Table 4.

Independent ANOVA test

Variable	Gender	N	Mean	F	Sig.
Mental Toughness	Male	89	36.88	12.124	0.000
	Female	65	34.62		
	Control	62	35.87		
Self-Confidence	Male	89	52.92	17.637	0.000
	Female	65	49.35		
	Control	62	52.44		

Table 5.

Multiple Comparisons

		Multiple Comparisons			
		LSD			
Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.
Mental Toughness	Male	Female	2.26102*	.45931	.000
		Control	1.00544*	.46569	.032
		Female	-2.26102*	.45931	.000
	Female	Control	-1.25558*	.49974	.013
		Male	-1.00544*	.46569	.032
		Control	1.25558*	.49974	.013
Self-Confidence	Male	Female	3.56750*	.62889	.000
		Control	.48586	.63762	.447
		Female	-3.56750*	.62889	.000
	Female	Control	-3.08164*	.68425	.000
		Male	-.48586	.63762	.447
		Control	3.08164*	.68425	.000

\*. The mean difference is significant at the 0.05 level.

Based on Table 5, it shows that the mental toughness of male is better than that of female (p-value  $0.000 < 0.05$ ) and the control group (p-value  $0.032 < 0.05$ ). Furthermore, male self-confidence was better than female (p-value  $0.000 < 0.05$ ), but there was no difference with the control group (p-value  $0.447 > 0.05$ ). This result can be concluded that male mental toughness and self-confidence are better than female.

## Discussion

### Differences in Mental Toughness between Men and Women

Based on the results of the study, it shows that there is a significant difference in mental toughness of volleyball extracurricular participants based on gender. The mental toughness of male volleyball extracurricular participants is higher than female athletes. The results of this study are in line with research conducted by Nicholls et al. (2009) also states that men have significantly higher mental toughness scores than women in facing challenges, controlling emotions, controlling their lives and having confidence. Based on the results of Tangkudung et al. (2021) aims to determine the condition of the mental toughness of athletes based on age and gender. Samples were taken from 174 pencak silat athletes (Age =  $19.69 \pm 2.89$ ). The results of the study can be concluded that the mental toughness of 174 pencak silat athletes in Bekasi is in the high category and the majority are male. The highest and dominant mental toughness category is commitment, and the lowest and dominant mental toughness category is challenge. This means that athletes have a high commitment to become winners and carry out everything

that has been planned, but are less good at dealing with every obstacle and challenge that exists.

Research Khan et al. (2017) this study aims to explore the relationship of mental toughness and athletic performance of Pakistani corporate cricket players on a gender basis. The stratified random sampling method (Proportional) was used and 176 cricket players. The results showed that male athletes had higher mental toughness scores than female athletes. In line with what was found by (Newland et al. 2013) which states male athletes have greater mental toughness than female athletes. This was evident in research conducted by Kumar and Ahmed (2013) with the aim of studying Mental-Toughness in male and female tennis players (Elite, Intermediate and Recreational). A sample of 180 male and female Tennis players aged between 16-35 years was selected for this study. The results showed that when competing against opponents, male athletes have an advantage in controlling difficult circumstances compared to female athletes.

The study conducted by Arazeshi, Alikhani Deheghi, and Mohammadi (2019) aimed to investigate the relationship between mental toughness and athlete burnout in injured professional athletes. The available sample consisted of 142 athletes, aged 15 to 35 years in various fields. Independent t-tests confirmed significant differences between mental toughness and athlete burnout of injured male and female athletes. It can be concluded that athletes with higher mental toughness are less likely to experience athlete burnout during the injury period.

These results are in accordance with research conducted by Juan (2015), where there are significant differences in mental toughness between men and women. Male athletes have five advantages that become attributes of mental toughness compared to female athletes. The five attributes include self-confidence, visual and imagery control, motivation level, positive energy, and attitude control. However, female athletes only have two advantages over male athletes, namely in controlling negative energy and controlling attention. The ability to control low negative energy affects the weakness of overcoming negative emotions such as fear, anger, frustration, and temperament that can affect athlete pressure.

In general, it can be seen that men have physical strength over women, and the natural instincts that men have make them mentally superior to women. In addition to internal factors such as physical and natural instincts that have been mentioned, external factors such as the social environment also affect the amount of mental toughness of an athlete. A less supportive social environment causes the mental toughness possessed by athletes to be less as well. Male athletes are more mentally tough than female athletes because one of the reasons is the social environment (Sidhu 2018).

This research was conducted in Yogyakarta, where it can be seen that Javanese culture is still quite thick. The

patriarchal culture in Javanese culture itself is also quite strong. Explained by Murod and Jannah (2021) that the patriarchal culture inherited by Javanese culture is still quite strong, so that women's participation in public spaces such as sports is lacking. In the context of the wider social environment, Santoso (2019) added that women are always associated with meekness, so their participation in sports is often associated with a body that is too masculine or their sexuality life becomes a public discussion. Therefore, women's participation in sports needs certain considerations. Environmental factors such as those mentioned above may influence the differences in mental toughness between men and women, although further research is needed.

Nopiyanto and Alimuddin (2020) state that female athletes have a tendency to use emotions that create more stress. For example, women are more likely to internalize anxiety and keep replaying or analyzing mistakes more than men. Male athletes are more competitive in competition, have clear goals, play roughly and understand the rules of play while women are less competitive in competition. Theoretically, an understanding of male and female differences will influence one to treat both men and women. The existence of views on males and females makes it difficult for women to enter competition in sports. Participation in sports tends to be identified with male characteristics such as speed and strength, causing image problems for female athletes. Female athletes may also discard feminine behaviors that are typical for women after adopting masculine behaviors that accompany sports. Meanwhile, changes in female athletes causing negative reactions from others can have adverse consequences in the treatment of female athletes.

Based on this, training is needed to improve the mental toughness of athletes. Mental toughness for anyone who wants to succeed in achieving their goals, especially an athlete who will face competition is dedicated to developing mental toughness (Stamatis et al. 2020). This is in line with the results of previous research which revealed that adolescent athletes are athletes who are still lacking in terms of experience, and skills, and are less able to manage anxiety in the competition so that they can trigger negative emotions and high stressors so that mental reactions tend to fluctuate. Based on this, to minimize the decline in the psychological strength of athletes, athletes must apply mental training regularly. This is in line with what was stated that psychological processes including the mental toughness of athletes before, during, and after competition directly affect competition performance (Bedir et al. 2018).

#### *Differences in Self-Confidence between Men and Women*

Based on the results of the study, it shows that there is a significant difference in self-confidence of volleyball extracurricular participants based on gender. The self-confidence of male volleyball extracurricular participants

is higher than female athletes. The results of this study are in line with research conducted by Zeiger and Zeiger (2018) has shown in studies that lower levels of self-esteem in women and self-confidence and control compared to male sportsmen. The involvement of women is informative because there are significant gender differences in class membership. Women were less likely to be in the high mental toughness class, and showed lower levels of the specific traits of confidence, self-esteem, and control. Studies have shown lower levels of self-esteem in women (Huang and Humphreys 2012), and confidence and control as measured by the Sports Mental Toughness Questionnaire (SMTQ) are lower in women than men (Sheard, Golby, and Van Wersch 2009).

This is in accordance with the results of research which states that female athletes have a tendency to use emotions that create more stress. For example, women are more likely to internalize anxiety and continue to replay or analyze mistakes more when compared to men. In addition, female athletes have the ability to overcome difficulties, pressure, goal setting, intrinsic motivation and lower mental preparation when compared to male athletes (Nopiyanto and Dimiyati 2018). Male athletes have lower anxiety and higher self-confidence when compared to female athletes (Anagnostopoulos, Carter, and Weissbrod 2015). Male athletes have higher motivation when compared to female athletes. Deaner et al. (2015) found that male athletes have a higher interest in competing and winning as a motive for achieving in sports, while goal orientation is stated to be the same between female athletes and male athletes.

In general, gender affects a person's self-confidence. Jannah (2017) revealed that from other studies related to gender there are differences, because in general, women's predictors are forming their identity, and men are a certain goal. In research by Fawver et al. (2020) proved that boys who practice Sky Alpine are characterized by greater psychological resilience, self-confidence, and control than girls. Channon (2018) explains that gender is self-identity also has an influence on changes in social interactions with individuals. Boys have greater self-confidence and sporting competence compared to girls, while girls have better perceptions of physical appearance and physical strength than boys. A study of 25 schools in 5 countries found that gender strongly influences an individual's level of self-confidence. Specifically, this study states that males have higher levels of self-confidence than females (Sharma and Sahu 2013).

## Conclusions

The results of this study found evidence that the mental toughness and self-confidence of male volleyball extracurricular participants were better than female, so it is hoped that volleyball coaches can use it as one of the considerations for developing a development strategy so that the mental toughness and self-confidence of

extracurricular volleyball participants can be optimal and can be a means of evaluation for extracurricular volleyball participants. The coach can find out what methods need to be used to train athletes mentally, so that they can compete physically and mentally both during training and matches. Psychological factors or mental factors play a role in athlete achievement, so it is necessary to collaborate between coaches and psychological institutions to improve psychological or mental abilities in athletes which will create balance in athletes. The coach provides a deep understanding of the sport being trained, from basic skills to advanced tactics and strategies. Game techniques and rules are always developing, and coaches are expected to follow and master these developments so that athletes can have an idea of the achievements they should get. Future researchers, this research can be used as a reference. But this research is still only limited to the variables of mental toughness and self-confidence, therefore it is hoped that future researchers will be able to examine other psychological factors.

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## Conflict of interest

We are not aware of any conflict of interest related to this publication. Also no financial aspects were included in this study which might have affected the results. On behalf of the corresponding author I approve the manuscript for reading and submission by all named authors.

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