



Difference in life skills of young volleyball athletes (gender orientation) and identification of supporting factors for their improvement: A mixed method study

Diferencias en las habilidades para la vida de jóvenes atletas de voleibol (orientación de género) e identificación de factores que apoyan su mejora: Un estudio de métodos mixtos

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How to cite in APA

Ilham, M., Ma'mun, A., Yudiana, Y., Fitri, M., & Blegur, J. (2025). Difference in life skills of young volleyball athletes (gender orientation) and identification of supporting factors for their improvement: A mixed method study. *Retos*, 66, 1177-1193. <https://doi.org/10.47197/retos.v66.114260>

Abstract

Introduction: Differences in sports disciplines impact athletes' life skills (LS), and this is greatly influenced by the model and strategy of integrating LS into the training program.

Objective: This study aims to examine the differences in LS between male and female athletes and to identify the factors contributing to the improvement of LS.

Methodology: The researcher used a mixed method with an explanatory sequential design. The quantitative study sample totaled 51 young athletes (23 males and 28 females). Quantitative data was collected using the 47-item Life Skills for Sport Scale and analyzed descriptively and statistically independent samples t-test. There were six qualitative respondents. Qualitative data were collected using 47 semi-structured interview guidelines and analyzed thematically.

Results: There were no significant differences between the two sample groups, but female athletes had a better LS. Six of the eight LS indicators showed significant differences: time management, emotional skills, interpersonal communication, social skills, leadership, and problem-solving and decision-making.

Discussion: Experiences that contribute to improving young athletes' LS are providing opportunities to discuss and evaluate training results, playing the role of team captain or group leader, setting a clear training schedule for each training component, being open to mistakes in order to control emotions better, training in pairs or groups to encourage closer relationships, and simulating various problems or challenges during training.

Conclusions: Future researchers need to design a LS integration program to address the LS issues of young athletes.

Keywords

Volleyball athlete life skills; gender-based life skills; volleyball life skills training.

Resumen

Introducción: Las diferencias en las disciplinas deportivas impactan las habilidades para la vida (HP) de los atletas, y esto está fuertemente influenciado por el modelo y la estrategia de integración de las HP en el programa de entrenamiento.

Objetivo: Este estudio tiene como objetivo examinar las diferencias en las HP entre deportistas masculinos y femeninos e identificar los factores que contribuyen a la mejora de las HP.

Metodología: El investigador utilizó un método mixto con un diseño secuencial explicativo. La muestra del estudio cuantitativo estuvo compuesta por 51 jóvenes deportistas (23 hombres y 28 mujeres). Los datos cuantitativos se recopilaron mediante la Escala de Habilidades para la Vida Deportiva de 47 ítems y se analizaron descriptivamente y estadísticamente mediante una prueba t para muestras independientes. Seis participantes cualitativos participaron. Los datos cualitativos se recopilaron mediante 47 guías de entrevistas semiestructuradas y se analizaron temáticamente.

Resultados: No hubo diferencias significativas entre los dos grupos de muestra, pero las atletas femeninas tuvieron un mejor HP. Seis de los ocho indicadores de HP mostraron diferencias significativas: gestión del tiempo, habilidades emocionales, comunicación interpersonal, habilidades sociales, liderazgo, resolución de problemas y toma de decisiones.

Discusión: Las experiencias que contribuyen a mejorar las habilidades de vida de los jóvenes atletas son brindar oportunidades para discutir y evaluar los resultados del entrenamiento, desempeñar el papel de capitán del equipo o líder del grupo, establecer un cronograma de entrenamiento claro para cada componente del entrenamiento, estar abierto a los errores para controlar mejor las emociones, entrenar en parejas o grupos para fomentar relaciones más cercanas y simular varios problemas o desafíos durante el entrenamiento.

Conclusiones: Los futuros investigadores necesitan diseñar un programa de integración de HP para abordar los problemas de HP de los atletas jóvenes.

Palabras clave

Habilidades para la vida de los atletas de voleibol; habilidades para la vida basadas en el género; capacitación en habilidades para la vida en voleibol.

Introduction

Along with the progress of the era, the value of competition in various sectors is also increasing, resulting in people who are not ready for the progress of the era facing emotional instability, potentially becoming unemployed, imbalance in personal relationship conflicts, and becoming individuals who doubt themselves. They will feel lonely, become more anxious, and also depressed, which has a negative impact on their academic and social lives. Such conditions underline the importance of life skills for individuals (Bala et al., 2024; Ubale et al., 2023). The need for life skills can stimulate individuals to investigate what variables help them increase resilience in the face of adversity (World Health Organization, 1996). Life skills also help individuals to optimize psychological assets, values, and skills to overcome life's challenges while helping them develop their potential by turning challenges into opportunities to adapt to the various demands of changing times (Gould & Carson, 2008; Jones & Lavalley, 2009; Kendellen et al., 2017; Razali, Mansur, et al., 2024). It is because life skills teach individuals always to be careful, focused, sporty, diligent, have goals, emotional regulation, honesty, teamwork, respect, time management, interpersonal communication, social skills, leadership, problem-solving, and decision-making (Cronin & Allen, 2017; Kendellen et al., 2017; Steptoe & Wardle, 2017). That is why life skills are very important in the 21st century (Gupta, 2021; Razali, Blegur, et al., 2024) because they are effective in helping individuals transform to solve various life problems (Razali, Mansur, et al., 2024).

Internalization of life skills must reach various educational practices, learning, sports, and so on so that individual life skills are an iterative process that helps them to continue to develop over time. Unfortunately, this hope has not been realized properly. For example, in a literature study, Kirchoff and Keller (2021) reported little evidence regarding the effectiveness of life development programs in schools. Another study reported that most elementary school students had low and very low life skills (Singh, 2019). Likewise, senior secondary school students still had life skills that were only dominant in the average category (Bala et al., 2024). Still related to life skills, significant differences were also found between men and women, where middle school men had higher life skills than women (Bala et al., 2024). Other reports also noted that female students had better life skills than male students (Düz & Aslan, 2020; Karademir, 2020; Yilmaz, 2020). This data difference is also an interesting note for further investigation. Does age influence this and life skills intervention programs or even occur naturally (ex post facto), or is it also due to the lack of life skills transfer process so that its development and acculturation have not become an iterative process in individual lives? Although it shows differences in study data based on gender, there are at least some notes on students' life skills problems such as teamwork skills, dealing with stress and emotions, critical thinking (Erduran Avcı & Korur, 2022), leadership (Düz & Aslan, 2020), and problem-solving (Ghofur et al., 2023).

Life skills are an ongoing process that individuals undertake to learn further, internalize, and develop personal assets (i.e., psychosocial skills, knowledge, dispositions, identity construction, or transformation) in sports and then to transform themselves through the application of those assets in one or more life domains outside the context in which they learned them (Kendellen & Camiré, 2019; Pierce et al., 2017). Although sports differences also significantly impact athletes' life skills (Yilmaz, 2020), it should be noted that this is highly dependent on the design model and strategy for integrating life skills into athletes' sports training. Considering this rationale, life skills must also be encouraged through intentional structuring programs in sports practice to impact the development of individual life skills (Bean & Forneris, 2016; Kendellen et al., 2017) while teaching how to transfer them outside of sports (de Subijana et al., 2022). Sports have become an ideal medium for training and improving individual life skills. Several previous studies have successfully designed structured sports training programs to train athletes' life skills. For example, life skills integration programs into basketball training (McCarthy et al., 2022; Prasetyo et al., 2024; Suardika et al., 2022), soccer training (Afrizal et al., 2023; Tafaqur, 2022), golf sports (Kendellen et al., 2017), and aquatic activities (Sonjaya et al., 2024).

The discussion above shows three main gaps that will be filled in this study. First, there are different life skills results based on gender. Therefore, this study will re-examine whether there are differences between the two gender groups in life skills or vice versa in certain life skill indicators so that they can be important findings in formulating more proportional and sustainable athlete training programs. Second, various researchers have shown their success in integrating life skills into various sports;



unfortunately, it is still very limited in volleyball. For this reason, this preliminary study will provide significant data for future studies on aspects of life skills that must be considered when designing an intentionally structured life skills integration program into the athlete's training experience. According to Rani and Neeraj (2020), individuals can acquire life skills through education and direct everyday life experiences. Acak et al. (2023) and Bae et al. (2024) added that being regularly involved in the design of intentional life skills integration in the sports training process from an early age can form athlete life skills that positively affect their future life transfer. Third, to present comprehensive results, this study uses a mixed methodology so that the athlete's perspective is not only portrayed quantitatively but also captures the athlete's experiences and recommendations that are more clinical and operational about ideal training that can shape their life skills in volleyball training.

Therefore, this preliminary study aims to examine the differences in life skills between young male and female athletes and to identify the experiences of both male and female athletes in improving life skills as a basis for projecting the development of an integrated life skills training program for young volleyball athletes.

Method

This study uses a mixed method with an explanatory sequential design to solve the problem. The researcher began the study by collecting quantitative data and analyzing the results, then developing the quantitative results with qualitative data collection and analysis to clarify the results (Creswell & Creswell, 2018). The researcher completed the explanatory sequential design study using six protocols recommended by Ivankova et al. (2006), namely: (1) quantitative data collection, (2) quantitative data analysis, (3) connecting quantitative and qualitative phases, (4) qualitative data collection, (5) qualitative data analysis, and (6) integration of the quantitative and qualitative results.

Quantitative data collection

The researchers collected life skills data from 51 young athletes, 23 males ($M \pm SD$ age = 14.5 ± 1.5) and 28 females ($M \pm SD$ age = 13.9 ± 1.3), who were determined using simple random sampling. They had been in volleyball sports training for one to nine years in East Jakarta City, Special Capital Region of Jakarta Province, Indonesia.

The sample completed the life skills data entry using the Life Skills for Sport Scale (LSSS) constructed by Cronin and Allen (2017) with the help of Google forms on a five-point Likert scale (not at all very much). This scale includes 47 items developed using eight indicators. First, seven items from the teamwork indicator with a convergent validity value of 0.44-0.75 and a Cronbach's alpha reliability = 0.84, including the item: "*Change the way I perform for the benefit of the team/group.*" Second, seven items from the goal-setting indicator with a convergent validity value of 0.68-0.82 and a Cronbach's alpha reliability = 0.89, including the item: "*Set short-term goals to achieve long-term goals.*" Third, four items from the time management indicator with a convergent validity value of 0.82-0.85 and a Cronbach's alpha reliability = 0.89, including the item: "*Set goals so that I use my time effectively.*"

Fourth, eight items from the emotional skills indicator with convergent validity values of 0.66-0.81 and Cronbach's alpha reliability = 0.89, including the item: "*Know how to deal with my emotions.*" Fifth, four items from the interpersonal communication indicator with convergent validity values of 0.75-0.80 and Cronbach's alpha reliability = 0.88, including the item: "*Pay attention to peoples' body language.*" Sixth, five items from the social skills indicator with convergent validity values of 0.67-0.78 and Cronbach's alpha reliability = 0.85, including the item: "*Get involved in group activities.*" Seventh, eight items from the leadership indicator with convergent validity values of 0.73-0.81 and Cronbach's alpha reliability = 0.92, including the item: "*Help others solve their performance problems.*" Finally, four items from the problem-solving and decision-making indicators with convergent validity values of 0.77-0.82 and Cronbach's alpha reliability = 0.88, including "*Evaluate a solution to a problem.*"

Quantitative data analysis

The life skills data were then analyzed descriptively to determine the mean and standard deviation, minimum and maximum values. The differences in life skills responses from the two sample groups, namely men and women, were tested using an independent samples t-test. If the significance value is



greater than alpha ($\text{sig.} > 0.05$), there is no significant difference in life skills views between men and women, and vice versa. The data collection and analysis process uses the help of Google Forms, Microsoft Excel, and SPSS version 29.

Connecting quantitative and qualitative phases

After completing the quantitative data analysis, the researcher connected to the qualitative stage. It started by determining six respondents, namely four women ($M \pm SD$ age = 14.3 ± 1.5) and two men ($M \pm SD$ age = 15.0 ± 1.4). They were determined by purposive sampling by considering the most prominent data from the description of the life skills indicators from the quantitative study results. Determining such samples (purposive sampling) aims to obtain more exploratory and clinical data about their views and experiences in volleyball training programs that influence the formation of their life skills.

At this stage, the researcher also began to determine the data collection technique, time of data collection, place of data collection, and the data analysis technique used. The researcher also compiled a semi-structured question guideline that focused on the factors that influence the differences in the six life skills indicators between gender groups to form a thematic meaning that the researcher can recommend to coaches when designing a volleyball training program that supports improving athletes' life skills.

Qualitative data collection

The researchers developed 27 initial semi-structured questions to gather data from athletes regarding their understanding of life skills (along with its indicators) based on the concept of Cronin and Allen (2017). These questions covered perspectives on life skills training, the rationale for life skills in supporting volleyball performance, and the significance of life skills in fostering athletes' life success. For example, *"What do you understand about life skills," "Is it important to integrate life skills systematically in training programs," "Is there a training program that integrates life skills in your training."* Not only that, questions that focus on life skills indicators are also asked, such as in the example of the leadership indicator, namely *"In your opinion, how to train leadership in a volleyball training program," "In your opinion, why is leadership important to support volleyball training performance," and "In your opinion, why is leadership important to support your life success."*

Follow-up questions (20 items) were also constructed to focus more on differences in data from life skills indicators in the sample group, such as in time management indicators, emotional skills, interpersonal communication, social skills, leadership, and problem-solving and decision-making as to clarify and/or complement previous quantitative studies. The six indicators (out of eight life skills indicators) have significant differences (although, in general, there are no significant differences between the two sample groups) (see Table 3). Exploration of differences in the life skills indicators aims to capture the meaning of volleyball training views and experiences that contribute to differences in life skills between male and female groups.

Some examples of follow-up questions in this qualitative study are: *"How did the volleyball training experience help you practice good time management," "How did you use the time you had during volleyball training,"* and so on. Because of its nature to confirm and complement previous studies, the questions/statements researchers asked were very dynamic between one respondent and another because they adjusted to the results of respondents' responses in the previous online survey.

Qualitative data analysis

The data from the interview results were analyzed thematically to capture the meaning of athletes' experiences of life skills integration in volleyball training programs and the factors that influence them to complete the differences in life skills indicators from quantitative studies. The researcher adopted the thematic analysis protocol Naeem et al. (2023) developed to complete the qualitative data analysis stage (see Figure 1).

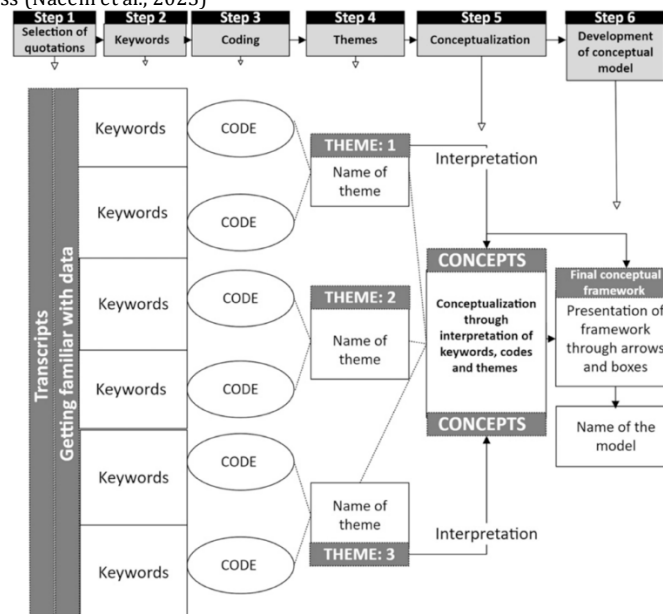
First, transcription, familiarization with the data, and selection of quotations; namely, the researcher transcribes the data and familiarizes himself with it. Exploring the content in depth to understand the initial theme by deciding on quotes that bring the data to life and accurately represent various perspectives and patterns relevant to the research objectives. Second, the selection of keywords, namely

examining interview data carefully to diagnose recurring terms, patterns, or elements and designating them as keywords that reflect the experiences and perceptions of participants.

Third, coding, where the researcher codes phrases or short words from data segments to reduce the data's core message, significance, or theme. This step simplifies complex textual data by transforming it into a theoretical form and helps identify elements related to the research question. Fourth is theme development, namely organizing codes into meaningful groups by identifying patterns and relationships and transitioning detailed analysis of codes and categories to more abstract interpretations by creating themes.

Fifth is conceptualization through the interpretation of keywords, codes, and themes, namely the process of understanding and defining concepts that emerge from the data. Researchers identify social patterns and refine them into definitions that align with the study's main objectives. Researchers can use visualization tools like diagrams or models to clarify the relationships between these concepts. The quality of the definition is assessed based on its clarity, accuracy, reliability, applicability, and contribution to theory and practice. Thus, a conceptual model is developed, where researchers create a unique representation of data guided by previous theories. The model serves to answer research questions and underline the contribution of research to the development of science.

Figure1. Thematic analysis process (Naeem et al., 2023)



Integration of the quantitative and qualitative results

The final protocol of explanatory sequential design is integrating the quantitative and qualitative results, where researchers integrate and interpret the results of both studies. In other words, the results of qualitative studies clarify and/or elaborate the factors that cause differences and/or no differences in life skills (including their indicators) from the sample groups.

Results

Quantitative results

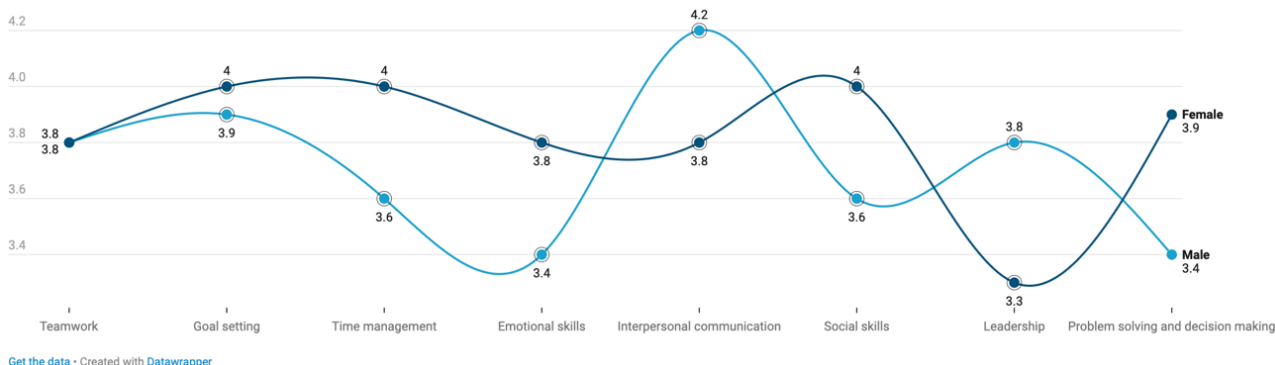
Descriptive Analysis

Figure 2 visualizes the mean difference of each indicator between the two sample groups. In general, the female sample group has a better life skills portrait than the male sample group. Of the eight life skills indicators, the male sample group responded to the interpersonal communication indicator ($4.2 \pm 0.8 > 3.8 \pm 0.9$) and the leadership indicator ($3.8 \pm 1.0 > 3.3 \pm 0.9$) higher than the female sample group.

In contrast, the female sample group excelled over the male sample group in five indicators, respectively: goal setting ($4.0 \pm 0.9 > 3.9 \pm 1.0$), time management ($4.0 \pm 0.8 > 3.6 \pm 0.9$), emotional skills ($3.8 \pm 0.9 > 3.4 \pm 0.8$), social skills ($4.0 \pm 0.9 > 3.6 \pm 0.9$), and problem-solving and decision-making ($3.9 \pm 0.8 >$

3.4±0.9). The only life skills indicator with an equivalent mean between the two sample groups is teamwork (3.8±1.0 = 3.8±0.9).

Figure 2. Mean indicator of life skills (gender orientation)



To facilitate the categorization of athlete life skills, researchers used four interval categories using the formula developed by Widoyoko (2012), namely the highest value (5 x 47 = 235) minus the lowest value (1 x 47 = 47) divided by the interval class (4) resulting in an interval value of 47 (235-47/4). Thus, the categorization results are as follows: (1) 0-93 (very poor), (2) 94-140 (poor), (3) 141-187 (fair), (4) 188-235 (good) (see Table 1).

The results of the categorization of student life skills prove that there is not a single athlete in the “Very poor” (0%) category from both sample groups. In the “Poor” category, two athletes (8.7%) in the male sample group had life skills scores between 94-140, precisely at the final scores of 126 and 120. On the other hand, in the female sample group, none (0%) were found in the life skills score range of 94-140. Furthermore, in the “Fair” and “Good” categories, the female sample group dominated the male sample group. Each was 7.8% (5 points) in the “Fair” category and 0.9% (2 points) ahead in the “Good” category (see Table 1).

Table 1. Categorization of life skills in male and female athletes

| Score | Categorization | Male (n = 23) | | Female (n = 28) | |
|-----------|----------------|---------------|------------|-----------------|------------|
| | | Frequency | Percentage | Frequency | Percentage |
| 0 - 94 | Very poor | 0 | 0% | 0 | 0% |
| 95 - 141 | Poor | 2 | 8.7% | 0 | 0% |
| 142 - 188 | Fair | 13 | 56.5% | 18 | 64.3% |
| 189 - 235 | Good | 8 | 34.8% | 10 | 35.7% |
| Total | | 23 | 100% | 28 | 100% |

Independent Samples t-test

The independent samples t-test analysis is justified based on the results of statistical prerequisite tests, namely normality and homogeneity tests. The results of the normality and homogeneity tests reported that the significance value was found to be greater than 0.05, which concluded that the data from both sample groups were normally distributed with the Kolmogorov-Smirnov test (male = 0.200; female = 0.200) and Shapiro-Wilk (male = 0.840; female = 0.444) and also homogeneous (sig. = 0.064) (see Table 2).

Table 2. Results of data normality and homogeneity tests

| Group | Kolmogorov-Smirnov ^a | | Shapiro-Wilk | | Levene's test | |
|--------|---------------------------------|-------|--------------|-------|---------------|-------|
| | Statistic | Sig. | Statistic | Sig. | F | Sig. |
| Male | 0.088 | 0.200 | 0.977 | 0.840 | 3.579 | 0.064 |
| Female | 0.116 | 0.200 | 0.965 | 0.444 | | |

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Overall, the independent samples t-test analysis proves that there is no difference in life skills between the two sample groups because the significance value is greater than 0.05 (t-value = -0.724; sig. = 0.473) (see Table 3).



When viewed based on the life skills indicators, six (out of eight) show significant differences between the two sample groups. In detail, the male sample group has a higher mean on two indicators, namely: “*Interpersonal communication*” (16.7±2.6; sig. = 0.015) and “*Leadership*” (30.0±6.5; sig. 0.041). Meanwhile, the female sample group had a higher mean on four indicators, namely: “*Time management*” (16.0±2.7; sig. = 0.033), “*Emotional skills*” (30.0±4.1; sig. = 0.039), “*Social skills*” (20.2±2.8; sig. = 0.012), and “*Problem-solving and decision-making*” (15.8±2.7; sig. = 0.009).

Two other indicators that did not show differences in life skills between the two sample groups were the “*Teamwork*” indicator, which had a significance value of 0.773 (>0.05), and the “*Goal setting*” indicator, which had a significance value of 0.576 (>0.05).

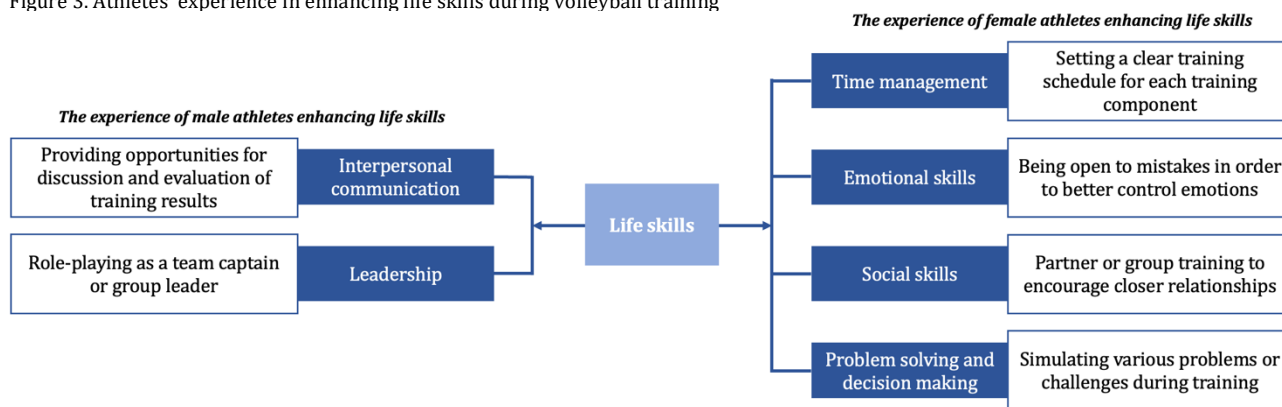
Table 3. Results of independent samples t-test of life skills indicators

| No | Life skill indicators | Group statistics (M±SD) | | Independent samples t-test | | Decision |
|----|-------------------------------------|-------------------------|-----------------|----------------------------|-------|-----------------|
| | | Male (n = 23) | Female (n = 28) | t-value | Sig. | |
| 1 | Teamwork | 3.8±1.0 | 3.8±0.9 | -0.291 | 0.773 | Not significant |
| 2 | Goal setting | 3.9±1.0 | 4.0±0.9 | -0.563 | 0.576 | Not significant |
| 3 | Time management | 3.6±0.9 | 4.0±0.8 | -2.199 | 0.033 | Significant |
| 4 | Emotional skills | 3.4±0.8 | 3.8±0.9 | -2.119 | 0.039 | Significant |
| 5 | Interpersonal communication | 4.2±0.8 | 3.8±0.9 | 2.523 | 0.015 | Significant |
| 6 | Social skills | 3.6±0.9 | 4.0±0.9 | -2.611 | 0.012 | Significant |
| 7 | Leadership | 3.8±1.0 | 3.3±0.9 | 2.118 | 0.041 | Significant |
| 8 | Problem-solving and decision-making | 3.4±0.9 | 3.9±0.8 | -2.732 | 0.009 | Significant |
| 9 | Total | 3.7±0.9 | 3.8±0.9 | -0.724 | 0.473 | Not significant |

Qualitative results

The results of this qualitative study focused on life skills indicators that showed significant differences between the two sample groups (see Table 3). Each: time management, emotional skills, interpersonal communication, social skills, leadership, problem-solving, and decision-making. This qualitative study seeks to explore the views and experiences of athletes to improve aspects of their life skills so that they can be considered by coaches when designing training programs that facilitate the development of these aspects of life skills.

Figure 3. Athletes’ experience in enhancing life skills during volleyball training



For example, male athletes successfully improved their interpersonal communication by having opportunities for discussion and evaluation of training results. Additionally, they enhanced their leadership skills by role-playing as a team captain or group leader during volleyball training. While in the group of female athletes, they had the experience of successfully improving time management through setting a clear training schedule for each training component, improving emotional skills through being open to mistakes in order to control emotions better, improving social skills through partner or group training to encourage closer relationships, and improving problem-solving and decision-making through simulating various problems or challenges during training (see Figure 3).

Providing Opportunities for Discussion and Evaluation of Training Results

Being involved in a new training community does not necessarily make athletes feel comfortable and safe to train. Because they have different volleyball skills from other colleagues, they often feel

embarrassed to express their views and/or to others, both fellow athletes and coaches. Of course, this does not help athletes to develop because, in some cases, some things are not right, so they have to convey them so that improvements can be made in the next training. They use the momentum of discussion and evaluation to provide input and/or their views on training activities. It will start by first listening to the coach's evaluation of their training performance, followed by their responses to the performance they have achieved, as in the following reference code.

"For me, I prefer training that involves discussions with my teammates. We discuss strategies before playing, then try to apply them during practice. Afterward, the coach evaluates whether our communication was effective or not." (FYP/male/14 years old).

"The easiest way is to practice listening first. So, I listen to my teammates or coach speak, then I try to respond with clear words. Because I keep practicing, I have become more fluent in speaking with anyone." (EGS/male/16 years old).

The improvement of athletes' interpersonal communication does not occur naturally. Therefore, the design of an environment that supports communication between fellow athletes and coaches must also be a concern for coaches. Coaches need to provide moments of evaluation and feedback to athletes to express their volleyball training performance that they have achieved and also evaluate how athletes communicate their performance. Considering that the most sensitive thing in interpersonal communication is the feeling of being offended during the exchange of views, the athlete's way is to convey their feelings during the evaluation and feedback honestly and politely. According to them, this method is easier to accept because they express their views objectively according to the problems or obstacles experienced during training. It is as stated by EGS (male/16 years old) as follows: *"I always try to communicate honestly but politely. If I feel that something is wrong or not quite right, I speak directly to my teammate in a way that doesn't offend them so that the issue can be resolved quickly."*

Role-Playing as a Team Captain or Group Leader

Organizing athletes in a training community allows coaches to develop athlete leadership. However, some athletes take the initiative to take on leadership roles, even though these roles are not structurally assigned. With a strong vision to win the game, these athletes show great concern for their teammates' training performance. They realize that improving their performance together can reduce mistakes and increase their chances of winning. In addition, they understand that to hone their leadership skills, they need to practice playing the role of team captain or group leader so that they are accustomed to making the right decisions. Although there are some mistakes, they learn to influence their teammates to achieve common goals, as reflected in the following reference code.

"I think effective training is when we are taught to make decisions, such as deciding which strategy to use or when to switch positions. That way, I can become a reliable leader." (FYP/male/14 years old).

"Good training allows us time to learn from our mistakes. For example, after a match, I am given the opportunity to analyze what was done well and what needs improvement. This helps me understand how to lead wisely." (EGS/male/16 years old).

For example, when they see a friend who is often silent on the field, they are afraid of making mistakes. They take the initiative to invite them to discuss and convince them that mistakes are part of the process and the important thing is that we keep trying to fix them. Other athletes encourage their friends to increase their self-confidence and try hard, such as, *"Your passing was great! Keep it up and keep improving"* When they meet a friend who has successfully added points, they approach them to give appreciation, such as: *"That is an important point! You are great,"* which can encourage friends to be more confident and make good efforts for the team's success. It is simple, but as a leader, they must ensure that team members have one vision. That is why giving appreciation for the achievements and accomplishments of team members is one of the main tasks of leadership.

Setting a Clear Training Schedule for Each Training Component

In each training session, coaches and athletes choose programs focusing on aspects or components of basic skills and volleyball playing skills. However, athletes' obedience to the coach's program remains the main focus during training. They await the instructions given by the coach according to the coach's data on each athlete's performance so the coach can divide the training group according to the obstacles or focus of athlete development, for example, a group of athletes who focus on service, passing, blocking,



and so on. Some coaches organize all these training components simultaneously, which are arranged at certain training times, such as using five minutes for spikes or passing. Although simple, this helps athletes to focus on certain skills, and the results of their training are effective because they do not waste training time, as in the following reference code.

“Proper training should include practice sessions with time limits. For example, the coach instructs us to practice passing or spiking within a short period. This teaches me to think quickly and not waste time.” (AZA/female/13 years old).

“An effective training process includes a clear schedule from the coach. For instance, a 15-minute passing session followed by a 10-minute spiking session. This way, I know how to allocate my time and avoid wasting training time.” (MSA/female/15 years old).

“I usually estimate the duration of each session as well. If we’re practicing passing and serving, I know it will take about 20 minutes, so I can manage my time to focus on each technique properly.” (SPR/female/16 years old).

Setting a clear training schedule for each training component is necessary so that athletes do not spend excessive time discussing and/or spending time on skill components they have mastered. Instead, they must manage their time well on skill components that are not yet optimal. In some cases, athletes maximize their time management by always trying to use their training time best. If there is a break, they do not just sit but also complete it with passing or spike training to maximize their playing skills. However, athletes must also be good at managing their training time during the rest phase to maintain their stamina and train again optimally. So, training time feels more optimal. Other athletes manage their time and utilize their training time by actively asking and discussing techniques that the coach has not mastered. It means that athletes have succeeded in identifying their training needs in advance so that they are selective in using them well every time.

Being Open to Mistakes in Order to Better Control Emotions

All athletes who participate in sports are motivated so that their team can win the match to improve their level of competition, both as a team and as an athlete’s performance. Behind this motivation, there is an unavoidable fact that they also have to deal with realistic situations. In a match, only one team emerges as the champion, and conversely, there is a team that loses. When athletes are involved in a tight match, the final set is usually when the athlete’s emotional problems start to flare up. This dilemma requires athletes to respond positively and constructively to be accustomed to controlling their emotions well even though their team is not performing optimally and is even eliminated from the competition. It means that in addition to training technical skills, athletes’ emotional skills are also trained intentionally (intentionally structuring) in the training program. The following are some of the views of athletes on how to train and improve their emotional skills.

“I think proper training should include match simulations. In such situations, I learn to manage my emotions when losing or when the team is not performing well, so I know how to stay focused.” (AZA/female/13 years old).

“When I feel disappointed because my team loses in practice, I usually use that feeling to focus more and not let my emotions get in the way. It becomes my motivation to work harder and learn from the loss.” (ZAR/female/13 years old).

“For me, proper training is when the coach teaches us how to handle pressure. For example, being put in a situation where we must stay calm when the team is close to losing. From that, I learn to control panic and focus on finding solutions.” (MSA/female/15 years old).

The reference code above shows two interesting experiences training their emotions during the match. First, the coach must also teach them to face challenges rather than focusing solely on technical training. It also gives a balanced proportion to the athlete’s emotional training. Athletes will face emotional pressure and even frustration if they have low “flying hours,” even though they have good volleyball playing skills. If this continues in every crucial match, the team will lose more points, potentially harming the team. Therefore, athletes must learn to stay calm during training even if they fail to serve or spike. The coach focuses on *“Stay focused and do not let your emotions control you. Let us take a deep breath and try again more calmly.”* It shows that coaches must pay attention to athletes’ emotional management skills. Coaches must be open and sensitive to the negligence or emotional tension that

athletes may experience. With an understanding approach, coaches can help athletes stay calm and focused, improving their performance both on the field and in stressful situations.

Partner or Group Training to Encourage Closer Relationships

We should not see sports as a physical activity to achieve competitive goals, including the physical aspect. Sports are a collective and comprehensive arena, which allows the development of various skills that help athletes and coaches survive in their lives. Therefore, life skills, such as volleyball training, should also be an integral part of the training program. For example, to win a match, coaches need to optimize the potential of athletes by encouraging them to communicate their ideas and experiences in dealing with problems on the field. Social relations between coaches and athletes and athletes must be well established so that they feel comfortable with each other, even though they may have different perspectives. In this way, athletes can create a culture of open discussion and mutual respect and build “intimacy” within the group. As explained below, it will allow them to be more effective and efficient in capturing important cues during training and matches.

“The right kind of training involves group discussions before playing. We sit together and discuss strategies. I learn how to express my opinions and listen to others, which helps me understand how to have a good discussion.” (AZA/female/13 years old).

“Volleyball training teaches me to respect others. While playing, I have to listen to the team captain and coach’s instructions. Because of that, I find it easier to listen to others at home or elsewhere and not always insist on my own way.” (ZPR/female/16 years old).

“I think the best training is playing together with friends in teamwork-based games. For example, playing volleyball while signaling to teammates about who will take the ball. Through this, I learn to communicate with my teammates to avoid misunderstandings.” (MSA/female/15 years old).

Listening to and respecting each other’s opinions helps athletes feel valued. MSA (15 years old/female) said, *“I always participate in group activities, especially during strategy discussions before playing. I enjoy sharing ideas about formations or attacking strategies, making me feel valued in the team.”* Another example of how athletes develop their social skills is how often they help their teammates. For example, when a friend cannot do an underhand serve, they are happy to teach them the right technique, such as adjusting their hand position to do the serve correctly. All of this is done without instructions from the coach, but they feel satisfied when their friends succeed. They learn to be more patient and understand that helping friends is crucial to achieving common goals. On another occasion, athletes were also willing to fetch a ball that was far away for a friend who looked tired after training. Such small actions help their friends not to lose energy again. They do it consciously to create a more comfortable training atmosphere for everyone involved.

Simulating Various Problems or Challenges During Training

Young female athletes have shown better problem-solving and decision-making abilities than young male athletes. The experience that makes them superior in life skills indicators is that they simulate various problems or challenges during training. For example, during spike training, athletes consider whether jumping high or looking for a lower angle for the spike is better. They try both alternatives and evaluate which option can be more profitable. Another form is that during service training, they think about whether it is better to serve short or hard. They try both and see which is more effective, depending on the opponent’s position. When attacking, sometimes there are moments when athletes must choose between defending or attacking. They think first about which is most effective; for example, if we are behind in points, is it better to attack or defend until an opportunity arises? Thus, athletes use their thinking skills during training to make problem-solving decisions. More details can be seen in the reference code below.

“I think the right training is when we are invited to discuss our decisions during training. For example, the coach asks why we choose a short or long serve, and we can explain how we solve problems during training.” (AZA/female/13 years old).

“I believe the right training process is when we are trained with real situations. For example, the coach gives a scenario in a match, and we have to decide whether to attack or defend quickly. From there, I learned how to solve problems quickly.” (MSA/female/15 years old).



"An effective training process is when we are given a problem on the field; for example, the opponent makes a quick attack, and we must decide how to defend quickly. That makes me learn to think quickly and find the right solution." (ZPR/female/16 years old).

"The right training is when we are challenged to choose a solution from several options, for example, choosing the most appropriate passing technique or how to attack the opponent. The coach will give feedback, and we will know which decision is better on the field." (ZAR/female/13 years old).

Ideally, the coach's training program should be able to represent the situations that will occur during the match. That is why getting athletes used to making decisions and solving problems is an important part of a match. They make timely decisions while simultaneously trying to solve technical and strategic problems during the match and, for example, analyzing the opponent's smash behavior that managed to escape the block so that they change the position of the block to ensure that the ball from the smash does not enter the team's playing field. If we look closely at the reference code above, the coach also has a role in improving young athletes' problem-solving and decision-making skills. The coach questions the athlete about each of his/her action choices so that the athlete must be aware and responsible for his/her problem-solving decisions. This method is an effort by the coach to ensure that the athlete's decisions during the match simulation are based on problem-solving, not "routine." In addition, another important thing is that the coach offers various considerations to his/her athletes about match problems so that they also have a series of alternative solutions they can apply during the match.

Discussion

Overall, the results of this study have reported that both male and female athletes did not show significant differences in life skills (sig. = 0.473). The results of this study finally confirm the differences with the previous studies of Düz and Aslan (2020), Karademir (2020), Yilmaz (2020), and Bala et al. (2024), which found significant differences between the two gender groups. On the contrary, it supports the studies of Anira et al. (2021) and Wahidah et al. (2023), which did not show statistically significant differences in life skills between the sexes ($p = 0.101$). However, if we look further, this study rejects the results of the study of Bala et al. (2024) and agrees with the studies of Düz and Aslan (2020), Karademir (2020), and Yilmaz (2020) that women have better life skills indicators than men. We also tried to capture other interesting data that needs further discussion, where there are significant differences in the six life skills indicators of the two sample groups. The six indicators are, respectively, time management (sig. = 0.033), emotional skills (sig. = 0.039), interpersonal communication (sig. = 0.015), social skills (sig. = 0.012), leadership (sig. = 0.041), and problem-solving and decision-making (sig. = 0.009).

These results provide evidence that in handling athlete training, a differentiated approach can be an alternative to improving the life skills of young athletes. Diagnosing life skills needs at the beginning of athlete training, in addition to sports playing skills, is something that coaches should do in addition to being able to help coaches design more effective training programs to handle athlete development as a whole. Coaches can use the reference results of the life skills diagnosis to design and empower potential athletes to complement each other and support the limitations of athletes during training. In principle, sports should also significantly contribute to the overall development of athletes that, not only help them in the world of sports and competitions but also help athletes survive in their academic and social lives. For that, training life skills in sports training programs is a necessity.

The experience of male athletes enhancing life skills

Male athletes have a higher mean on two main indicators: interpersonal communication and leadership. It shows that male athletes are more likely to develop interpersonal communication and leadership skills in the context of volleyball training than female athletes. Male athletes' experience shows they have improved their interpersonal communication skills by providing opportunities to discuss and evaluate training results. It indicates they are more open to sharing information and experiences with teammates. They clearly state their goals when talking to others and pay attention to other people's information and body language. Ensuring that male athletes respect anyone and listen to whatever their interlocutors express. This attitude may help them collect new information and data to improve their training performance. In training, coaches can adopt different sports coaching methods for male and female athletes (Nolan et al., 2024), including factors related to involvement and interpersonal



approaches. Effective communication in training activities conveys messages in the form of science and technology from coaches to athletes or athletes to coaches or between fellow athletes (Novitaria & Subarkah, 2018). For this reason, coaches lead, direct, and manage their athletes to communicate more effectively and clearly. Ensuring that athletes are free and also brave in expressing and discussing ideas, science, and technology, as well as their concerns for the success of the team (Nurrachmad et al., 2020) so that a healthy and productive relationship between coaches and athletes not only affects the athlete's performance on the field but also shapes the character and mental resilience of athletes (Windiasari & Dwi Putranto, 2024).

In relation to leadership skills, male athletes improve their leadership skills through role-playing as team captains or group leaders during training. Activities involving formal leadership roles, such as being a team leader, can improve male athletes' leadership abilities in decision-making, recognizing member achievements, motivating team members, and being a role model. Building experience as a captain has been agreed upon as a key tool to support athlete leadership, and this needs to be rotated periodically among all group members. Leadership is a fundamental factor influencing the performance of sports teams (Cotterill et al., 2022) and has also been an important aspect of life skills (Cronin & Allen, 2017; Gould, 2016; Mahardika et al., 2024). Providing leadership experience as a team captain has been reported to be successful in previous studies (Coker et al., 2022; Gould & Voelker, 2010; Voelker et al., 2019). It means that athlete leadership development must be learned and developed through personal experience and learning from others, not as a fixed trait. Coaches encourage team captains (athlete leaders) to solve problems or make decisions, reflect on and evaluate their solutions or outcomes, discuss what they could do differently next time, and identify actionable steps to improve their leadership abilities (Wallace & Shipherd, 2020).

The experience of female athletes enhancing life skills

On the other hand, the female sample group had a higher average in the other four indicators, namely time management, emotional skills, social skills, and problem-solving and decision-making. It shows that female athletes are superior in time management, emotional control, social skills, solving problems, and making decisions during training.

First, a qualitative study reported that female athletes improved time management by setting a clear training schedule for each component. This experience reflects the importance of time management in achieving better results during training sessions by carrying out more optimal planning (El-Komsan & El-Gebaly, 2010). Training is not only about knowledge of a sport and producing winners. Much more essential is to bring out the potential of athletes that allows them to achieve their full potential (Nurrachmad et al., 2020). Therefore, training time management in a training program is a necessity. Time management is not limited to time; individuals must be controlled to be more productive (Blegur et al., 2019). Coaches need to instruct, facilitate, and guide athletes to manage their time, including estimating how much time athletes spend on various training activities, controlling how they use their time, and no less importantly, athletes set specific goals in each component of their training so that they can optimize productive activities according to the time that has been decided. This condition explains that time management in the training process also correlates with the quality of a person's decision-making (El-Komsan & El-Gebaly, 2010). The goal is that when athletes are involved in academic activities, they also succeed in transferring time management by managing training sessions and academic schedules so that their activities do not overlap (Ator & Ortizo, 2024).

Second, female athletes improve their emotional skills by being open to mistakes to control their emotions better when faced with failure or challenges. It shows their awareness and willingness to learn from experience, an important element in emotional management. Emotional skills describe how an individual manages their emotions and those of others (Zajonz et al., 2024), not only when they get support but also when athletes get criticism. Therefore, emotional skills need to be intentionally trained in athlete training programs to improve athletes' emotional skills performance (Campo et al., 2016). For example, training athletes to be open to positive and negative criticism about their performance, recognize ways to control emotions, use their emotions to stay focused, and help colleagues control their emotions when bad events occur. Athletes recognize and manage their emotions and those of their teammates so that they remain focused on performance during training and competition (Akelaitis & Malinauskas, 2018). Stable emotions are a basic defense in supporting athlete performance during competition (Setyawati et al., 2023) and predict their performance satisfaction (Jowett et al., 2024).



Reflecting on the study by Akelaitis and Malinauskas (2018), team sports athletes have more developed emotional skills than individual sports athletes. In contrast, the Mon-López et al. (2023) study reported that emotional skills are more dominant in developing individual sports than team sports. These two contradictory facts confirm that the development of athletes' emotional skills is not always identical to the type of sport, but rather the coach's strategy of paying attention to behaviors that train the emotional skills of his athletes during training.

Next, discuss the social skills indicators. This study has reported that female athletes showed improvements through training with partners or groups, which aims to foster closer relationships between team members. It reflects the importance of cooperation and collaboration in sports training. Improving social skills is important for one's personal and professional development. These skills help athletes build better relationships with others (Gökel & Dağlı, 2017) through the formation of individual personalities holistically and harmoniously (Mulyana et al., 2024). The chemistry among athletes needs to be trained so that when they are in the competition arena, they are sensitive to their teammates' game movements to pass and spike correctly. Of course, this chemistry is created through intense interactions between fellow athletes during training, and the athlete's acceptance of the new social environment increases. They must ensure that their colleagues have a good social spirit characterized by creating initiatives to build conversations and interactions with their colleagues, maintain friendships, actively participate in group activities, and are willing to help colleagues even without being asked. These social experiences have been shown to maintain a healthy and constructive organizational climate (Jiang & Yin, 2022). Training in pairs in a micro-social community is commonplace in training centers, so coaches only need a few stimulations to rationalize why each athlete needs others. Thus, they do not feel superior in the community, but the roles and responsibilities of other athletes and coaches also determine an athlete's success.

The last discussion, the improvement of problem-solving and decision-making in female athletes, occurs through the experience of simulating various problems or challenges during training, which allows female athletes to practice skills in identifying solutions and making effective decisions in challenging situations. A structured sports environment can provide adequate conditions for the development and transfer of athletes' life skills (Bae et al., 2024) through the strategies of (1) focusing on one life skill per training, (2) introducing life skills at the beginning of training, (3) implementing strategies to teach life skills throughout training, and (4) evaluating life skills at the end of training (Kendellen et al., 2017). For this reason, the sports training environment needs to facilitate its athletes to think carefully about a problem, create various solutions to a problem, compare each possible solution to get the best solution, and they are also taught to evaluate solutions to a problem. So, the coach does not need to provide a series of answers to the problems that his athletes encounter but rather encourages their social, interpersonal, and leadership spirit to make their own problem-solving decisions through direct testing in training sessions. This habit can help his athletes visualize problem-solving in other environments (non-sports). Considering that athletes, wherever they are, human athletes will always face problems, problem-solving skills are the most important life skills (Antony & Tripathi, 2023). Problem-solving and decision-making will help athletes find new ways of thinking and solving problems oriented toward positive values (Rani & Neeraj, 2020).

Conclusions

After presenting the results and discussing the study, we can finally conclude that there are significant differences in skill development between male and female athletes in six life skills indicators (out of eight). The results of this study highlight the differences in skill development between male and female athletes, with each group having advantages in certain indicators relevant to their training experience. The male athlete group scored higher on two indicators: interpersonal communication and leadership. It shows that male athletes are superior in interpersonal communication and leadership skills compared to female athletes. In the qualitative study, male athletes' experience showed that they improved interpersonal communication skills by being allowed to discuss and evaluate training results. They also improved their leadership skills by role-playing as team captains or group leaders during volleyball training.



On the other hand, the female athlete group scored higher on the other four indicators, namely time management, emotional skills, social skills, and problem-solving and decision-making. It reflects that female athletes have advantages in managing time, emotional and social skills, problem-solving, and decision-making. The qualitative study expressed that female athletes succeeded in improving these life skills through various experiences, starting from improving time management skills by setting a clear training schedule for each component. They also improved emotional skills by learning to accept mistakes to control emotions better, improving social skills through partner or group training to strengthen relationships, and improving problem-solving and decision-making skills by simulating various problems or challenges during training.

Considering the results of the current study, researchers can consider future studies that examine the improvement of life skills with a structured training program or model and are oriented towards the life skills indicators of young athletes who are still having problems from both groups (male and female athletes). For example, a volleyball training program focuses on developing emotional skills, problem-solving, and decision-making. It can provide an overview of whether similar or different results can be achieved through systematic training. Equally important, each athlete certainly has different needs and cultures, so in training athlete life skills, a differentiated approach can be a relevant alternative. Further exploration is necessary to determine whether differences in culture or the social context in which athletes are trained (for example, differences in socio-economic background) affect the development of athlete life skills. This study can provide deeper insight into the external factors influencing these skills.

Acknowledgements

We would like to thank the Education Endowment Fund (LPDP), Center for Higher Education Funding and Assessment (PPAPT), and Indonesian Education Scholarship (BPI) for sponsoring the publication of this research.

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