The impact of the PEAK program on collegiate athletes' life skills and learning attitude

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B Data Collection
C Statistical Analysis
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Abstract

Background and Study Aim: The PEAK program was developed based on positive youth development theory to promote student-athletes' life skills. This study aim is the effectiveness of the application of the PEAK program on improving the life skills and learning attitudes of college athletes.

Material and Methods: A total of 28 participants (17 male, 11 female; Mage=19.64), who were enrolled in the 1st and 2nd grades of and registered as athletes in the Korean Olympic Committee, were included. The program was applied over eight sessions, each lasting approximately 90 minutes. Quantitative data collection was conducted pre- and post-test, using scales for life skills and learning attitude. A semi-structured questionnaire was used to collect qualitative data. The collected data were analyzed using paired t-tests, inductive content analysis, and word clouds.

Results: Among the sub-factors of life skills, there were statistically significant improvements in goal setting, time management, and stress management factors. In addition, the participants stated that they highly valued the opportunity for self-awareness during participation in the program, which was also helpful in improving their social skills. Among the sub-factors of learning attitude, there were statistically significant improvements in the factors of interest, attention, and motivation to learn. The participants showed poor learning attitudes before participating in the program, but post participation in the program had positive expectations that they would implement plans and improve their grades.

Conclusions: The PEAK program was found to be effective in improving the life skills and learning attitudes of college athletes. It can serve as an intervention program for athletes to balance their sports and daily lives, and empower them to live a better life.

Keywords: Korean sports culture • positive psychology • positive youth development • sports innovation

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INTRODUCTION

In Korean elite sports, "sports innovation" is attracting interest from many researchers focusing on topics such as future careers, dual careers, human rights, learning rights, and core competencies of student athletes [1]. In particular, the theories of positive youth development and sports-based youth development, which have a theoretical foundation in positive psychology, have fallen short in the era of sports innovation. Positive youth development and sports-based youth development prioritize student athletes to acquire and develop life skills in a sports environment [2].

Life skills are psychological, emotional, and behavioral skills (i.e. competencies) for well-being in other spheres of life as well as in sports. In other words, they are closely related to the quality of life [3]. Typical examples of life skills include goal-setting, emotional control, communication, interpersonal relations, conflict resolution, and stress coping [4]. It is important to have life skills, such as interpersonal or communication skills, as they are needed to adapt well to a group, maintain good relationships, solve disputes with friends, and reduce disagreement and conflicts. In sum, life skills can be understood as the skills and competencies needed to effectively handle or cope with what is happening in life [4-6]. Life skills can be acquired and developed through various activities. Positive youth development scholars report that among educational programs, life skills education based on physical activity or sports has the greatest effect on enhancing learning among youth [4]. Sports practice and competitions contain victory, defeat, peers, opponents, enjoyment, frustration, overcoming, skills, and coaches (parents and teachers), all of which contribute to a person's life experiences [7], thereby providing an ideal situation for transferring the values learned in sports to life [8].

Another important feature of life skills is that they can be developed through practice, such as that of sports techniques (i.e., dribbling in soccer) [9]. Accordingly, many sports-based youth development scholars have prepared theoretical frameworks to effectively explain the mediation of the life skills of students or athletes participating in sports. Hodge et al. [5] proposed a life skills development model by integrating basic psychological need theory and life development intervention theory. The conceptual frameworks proposed by sports-based youth development scholars have acted as important guidelines in developing sports life skills and transferring these skills to life. Recently developed sports-based life skills programs include SUPER (Sports United to Promote Education and Recreation) [10], Going for the Goal (GOAL) [11], The First Tee [12], and Developing Champion (DC) [13]. All of these programs have been studied and their effectiveness in numerous sports has been proven.

One study aimed to improve life skills by applying the SUPER program in physical education classes [14], where students in grades 6–8 were divided into control and experimental groups. The experimental group reported improvements in some sports skills and self-belief about life skills knowledge as well as less negative thought changes in comparison to the control group. Similarly, a study by Weiss et al. [15] applied a latent growth model to verify the effectiveness of The First Tee program, and found high levels of transfer of life skills and their gradual increase over time in the group exposed to the program.

More recently, there have been attempts to converge life skills programs and sports programs, such as the application of the HIFE-SUPER program, which combines the youth ice hockey program HIFE (Hockey is For Everyone) with the life skills program SUPER [16]. Along similar lines, PEAK has been developed in Korea [17, 18]. PEAK is an acronym for performance, enhancement, achievement, and knowledge, and this program implies that these four skills can be best acquired through sports. PEAK was developed based on numerous life skills, conceptual frameworks, and programs from around the world. Based on these international programs, a Korean version was developed to cater to the Korean sports culture while using a workbook for an effective intervention. The three stages of planning, acquisition, and implementation in the PEAK program aim to improve 14 life skills factors taught through 15 hours of guided instruction.

The PEAK program has been tested earlier on taekwondo major college students, and an examination of their life skills and learning attitudes found significant improvements in the participating students' goal-setting, time management, satisfaction, achievement levels, self-confidence, interest in learning, and interpersonal relationships [17]. The author concluded that this PEAK program should be adapted to include not only

taekwondo athletes, but athletes from other sports as well [17]. The key to developing healthy sports programs for the youth is undertaking research focused on helping elite athletes develop life skills that are transferable, and verifying these skills' effectiveness [3]. Healthy sports programs will help student-athletes, who have to balance academic and sporting life, transfer the cognitive, emotional, and behavioral skills acquired through sports to other important areas of their lives [17]. Therefore, this study aim is the effectiveness of the application of the PEAK program on improving the life skills and learning attitudes of college athletes.

This study had two specific research questions. First, how does the PEAK program affect the development of life skills in college athletes? Second, how does the PEAK program affect the learning attitude of college athletes?

MATERIAL AND METHODS

Participants

A total of 32 student athletes, registered with the Korea Olympic Committee, and attending and majoring in sports at Y University, were recruited for this study. Initially, 32 participants were recuited, however four participants were not able to complete the PEAK program fully due to personal reasons such as a call up for national team training and competitions, and surgery, and so for the analysis 28 participants (male = 17, female = 11) data were included in the analysis. The average age of the participants was 19.64 years (SD = 0.49); their general demographics characteristic – see Table 1.

Data collection
Life skills
To measure life skills, the Life Skills Scale for Student-Athletes (LSSSA), developed by Jang et al. [19] was used. This scale integrates basic psychological needs and life skills according to the theoretical framework proposed by Hodge et al. [5]. It comprises seven factors: three questions on time management, four questions on goal-setting, three questions on stress management, five questions on positive thinking, five questions on conflict resolution, three questions on communication and three questions on managing emotion. Each question is rated on a 5-point Likert scale, where a score of "1" represents "not at all" and "5" represents "totally agree." The reliability of the scale has been reported to range from 0.679 to 0.847 [19].

Learning attitude
A more generalized learning attitude scale was developed for this study based on the scale and questions used by Hong [20] and Lim [17]. This developed scale was composed of 20 questions, with five questions each for the four factors of interest in class, attention, learning motivation,

Table 1. General demographics characteristics of the surveyed athletes.

Identification category		N	%
Gender	Male	17	60.7
	Female	11	39.3
Grade	1st	16	57.1
	2nd	12	42.9
Sport	Judo	4	14.3
	Korean wrestling	4	14.3
	Table tennis	4	14.3
	Basketball	3	10.7
	Boxing	3	10.7
	Taekwondo (forms)	3	10.7
	Taekwondo (sparring)	3	10.7
	Soccer	2	7.1
	Wrestling	2	7.1
Total		**28**	**100**

Table 2. PEAK program details.

Session	Title	Sample of content
1	Orientation	Pre-testing and program introduction Concept of life skills
	Meeting and greeting	First meeting and finding commonalities Making a good first impression
	Revision	Maintain manners during class
2	Self-awareness	"Finding me" What am I like?
	Revision	Understanding the academic calendar and test schedule Checking report deadlines
3	Finding dream	My dream graffiti book Find my dream
	Goal-setting and practice	Establishing SMART goals Subject and results objectives Competition objectives
	Revision	Making a revision plan
4	Positive thinking	Changing your mind Changing your weaknesses into strengths
	Managing emotions	Understanding and measuring your mind Mind control skills
	Revision	Creating learning motivation Increasing self confidence
5	Enhancing confidence	If you can image, it is possible (successful imagery) Achieve your dream
	Self-management	Checking self-management skills Daily lifestyle management
	Revision	Presentation methods Managing school credits (graduation, tests, scholarship)
6	Appreciating diversity	Understanding differences Defining differences and mistakes
	Communication	Discussion strategies and techniques for communication Discuss dilemmas
	Revision	Participate in team projects Managing attendance
7	Interpersonal relationship	Maintaining relationships My personal relationship skills Maintaining personal space and distance
	Helping each other	Giving and helping Expressing thanks Throw your worries (game)
	Revision	Obtaining class information Telephone etiquette
8	Final evaluation	Reviewing the course Post-test and interview

and motivation for achievement. Each question was rated on a 5-point Likert scale, where a score of "1" indicated "not at all" and "5" indicated "totally agree." The reliability of the Hong's scale has been reported to range from 0.762 to 0.859 [20].

Semi-structured questionnaire

In order to qualitatively evaluate the effectiveness of the program, a semi-structured questionnaire was administered. The questionnaire was developed based on previous research on life skills and expert advice from sports psychologists who work with athletes in Korea. The questionnaire focused

Table 3. Changes in life skills before and after the program.

Factors		M	SD	t	p
Goal-setting	pre	3.44	0.38	−2.217	0.035*
	post	3.70	0.58		
Time management	pre	3.21	0.67	−2.909	0.007**
	post	3.61	0.67		
Stress management	pre	3.21	0.84	−3.753	0.001***
	post	3.79	0.48		
Positive thinking	pre	3.58	0.74	−1.682	0.104
	post	3.74	0.59		
Communication	pre	3.55	0.95	−0.523	0.605
	post	3.61	1.04		
Managing emotions	pre	3.52	0.61	−0.849	0.404
	post	3.62	0.75		

*indicates statistical differences between pre-and post-program participation:
*p<0.05; p**<0.01; p<***0.001

on life skills and learning attitudes. The questionnaire consisted the following questions: "What is the most memorable life skill in this program?", "Has participation in this program changed your mind or behavior?", and "What was your attitude toward learning before you participated in the program?"

Research plan
Procedure
A total of 32 student-athletes were recruited from the Student Life Counseling Center at the University, the Physical Education Support Center, or from the coach's recommendations. After being explained the purpose of the program in the orientation, the participants reaffirmed their willingness to participate. Subsequently, the athletes were divided into six classes, and the leaders of each class were selected. The program was held for a total of eight sessions of approximately 90 minutes each, once a week for two months, from November to December 2019.

PEAK program
The PEAK program is a life skills intervention program developed for Korean student-athletes [18]. It covers 14 life skills factors taught over 15 sessions, including the used of workbooks that have also been to revise the purpose of learning and help transfer life skills.
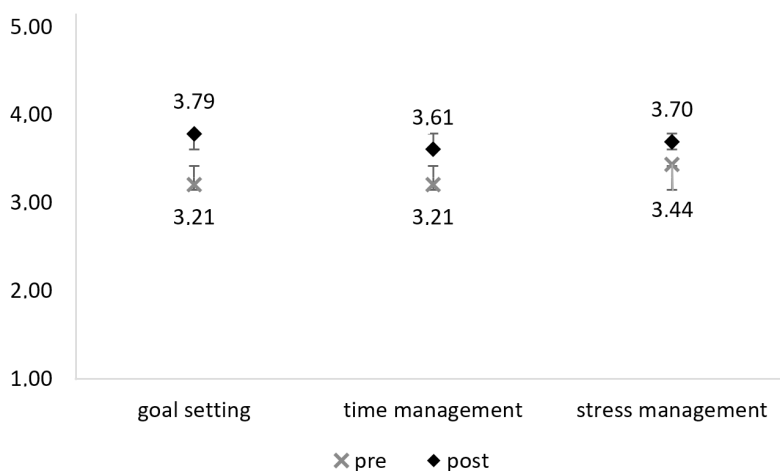

Figure 1. Changes in the life skills of goal setting, time management, and stress management.

Upon the advice of experts in the field and availability of the participants, the content of the 15 sessions including 14 life skills factors was reduced to the content of eight sessions including 12 life skills factors, with each session lasting about 90 minutes (details of the program are shown in Table 2). At the end of each session, the instructor provided the participants with information to improve their learning attitude, and also provided learning motivation. The workbook, which was modified for all sports, was used to reinforce the program's objectives.

Data analysis

All collected quantitative data were analyzed using the statistical program SPSS (version 23). In order to investigate the statistical differences in the mean (M; in the tables and the characteristics of the study participants also the standard deviation: SD) scores before and after the program, a paired t-test was conducted at a significance level of $p < 0.05$. Inductive content analysis was applied to the qualitative data, which was collected through a semi-structured questionnaire. Inductive content analysis was performed over three steps as suggested by Elo and Kyngäs [21], namely, open coding, category formation, and abstraction. In the open coding step, all collected data were transferred to an Excel sheet, which was then examined by the researchers repeatedly to review documented data and derive new significant content. In the category formation step, significant data derived from open coding were grouped into upper categories. Finally, during the abstraction

stage, we visualized the data using the word cloud technique. Furthermore, to reduce errors during analysis, the interview process was regularly discussed by a group of experts (two with PhDs in sports psychology, two PhD candidates in physical education, and one with PhD in counseling), all of whom had extensive experience in inductive content analysis techniques.

RESULTS

Changes in life skills

Statistically significat changes in life skills before and after the program concern: goal-setting, time management, stress management (Table 3 and Figure 1).

Based on the inductive content analysis, the answers to the question, "What is the most memorable aspect of the life skills program?", were categorized into seven areas (Table 4). The participants in this study most highly evaluated self-understanding and finding their dreams/career (a visual representation of the categorized contents see in Figure 2).

Analysis of the answer to the question, "Are there any changes in your mind or behavior through participation in the life skills program?" show that the participants perceived their changes in social relationship and improvement of postitive thought (Table 5; visual representation in the form of a word cloud shown in Figure 3).

Figure 2. Word cloud on the most memorable contents in the PEAK program.

Table 4. Results of the inductive content analysis on the most memorable areas of the program.

Raw data (n)	Detailed area (n) / word cloud	General area (%)
(12)	Self-recognition (5) / Recognition Self-investigation (3) / Investigation Self-understanding (5) / Understanding	Self-understanding (24%)
(10)	Career worry (7) / Worry Searching careers (3) / Careers	Finding your dreams (20%)
(8)	Releasing stress (1) / Stress Changing thoughts (6) / Thoughts Changing weaknesses (1) / Weakness	Positive thoughts (16%)
(7)	Good impression (1) / G_impression First impression (5) / F_impression Meeting people (1) / Meeting	Meeting and greeting (14%)
(6)	Establishing goals (4) / E_goals Processing goals (2) / P_goals	Making and achieving your goals (12%)
(4)	Self-management (2) (Management) Emotional control (2) (Control)	Managing life (8%)
(3)	Communication (1) (Communication) Conversation skill (1) (Conversation) Appreciating diversity (1) (Diversity)	Relationship maintenance (6%)

Changes in learning attitude

Between factors (indicators) the changes in the learning attitude before and after the program no statistically significant change was found only in the case of "achievment motivation" (Table 6 and Figure 4).

Based on the inductive content analysis, the answers to the question "How was your learning attitude in classes before participating this program?" were categorized into four areas (Table 7; a visual representation of the categorized contents in the form of a word cloud is shown in Figure 5) – the participants had a poo class attitude before participating in the program.

Table 5. Results of the inductive contents analysis on the changes in thoughts and behaviors due to participation in the program.

Raw data (n)	Detailed area (n) / word cloud	General area (%)
(14)	Resolving conflicts (1) / Conflict Understanding others (3) / Understanding_O Relationship strengthening (9) / Relationship Increased intimacy (1) / Intimacy	Social interactions (23%)
(12)	Efforts for positive thought (2) / Positive_thought Increased positivity (9) / Positivity Recognizing positivity (1) / R_positivity	Changing negative thoughts to positive (20%)
(9)	Consistent application (2) / Consistency Systematic performance (1) / Performance Following intention (6) / Intentions	Increasing productive behavior (15%)
(9)	Searching careers (4) / Careers Systematic goals (4) / Goals Career worry (1) / Worry	Starting to prepare for the future/careers (15%)
(7)	Self-recognition (3) / Self-recognition Expansion of self-awareness (4) / Expansion	Self-understanding and growth (12%)
(6)	Frustration (2) / Frustration Control emotions (1) / Emotions Self-confidence (3) / Confidence	Emotional Control (10%)
(3)	Improving motivation (2) / Motivation Escaping amotivation (1) / Amotivation	Strengthening internal motivation (5%)

Figure 3. Word cloud on the changes in thoughts and behaviors in culture planning due to the PEAK program.

Table 6. Results of pre- and post -test scores on attitude to learning.

Factors		M	SD	t	p
Interest	pre	3.05	0.75	**−3.036**	**0.005***
	post	3.57	0.80		
Concentration	pre	2.93	0.81	**−2.690**	**0.012***
	post	3.43	0.84		
Learning motivation	pre	3.02	0.66	**−2.102**	**0.045***
	post	3.38	0.66		
Achievement motivation	pre	3.79	0.72	−1.053	0.302
	post	3.91	0.69		

*indicates statistical differences between pre-and post-program participation.
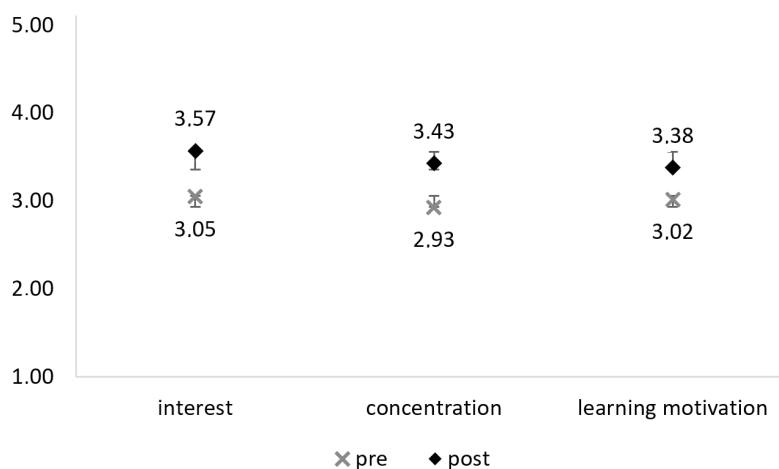* p<0.0

Figure 4. Changes in the life skills of interest, concentration, and learning motivation.

Table 7. Results of the inductive contents analysis on the attitudes toward class participation due to participation in the program.

Raw data (n)	Detailed area (n) / word cloud	General area (%)
(20)	Sleep (7) / Sleep Sleepy (2) / Sleepy Using a cellphone (7) / Phones Incompletion of assignment (4) / Incompletion	Poor class attitude (43.5%)
(12)	Passive class attitude (4) / Passiveness Shyness (3) / Shyness Absence (5) / Absence	Passive participation (26.1%)
(9)	Reduced concentration (5) / Concentration Boring (2) / Boring Distraction (2) / Distraction	Lack of concentration (19.6%)
(5)	Annoying (3) / Annoying Unprepared (1) / Unprepared Uninterestedness (1) / Uninterestedness	Amotivation (10.8%)

Figure 5. Word cloud on the changes in thoughts and behaviors in class due to the PEAK program.

A further inductive content analysis was carried out on the question "What change in learning attitude do you expect in the next semester because of participating in this program?" – the most participants expected improvement of grade and implementation of plans (Table 8; visual representation in the form of a word cloud shown in Figure 6.

DISCUSSION

The PEAK program was found effective in changing the life skills of college athletes. As a result of analyzing the difference between the pre- and post-average scores, statistically significant changes were found in goal-setting, time management, and stress management. With regard to the remaining factors, the average scores for positive thought, communication, and emotional control were measured to be higher after the program than before, but not statistically different.

The results in this study were similar to those of the long-term project conducted by Weiss et al. [15] on youth golf players, in which they reported on the application of the program "The First Tee," a golf-based life skills program for youth athletes to transfer the life skills learned by them in sports to other areas of their life. In addition, Goudas and Giannoudis [14], in their study, applied team sports and SUPER programs to general students, and reported improvements in students' perception of confidence and knowledge of life skills.

What is noticeable in the results of this study is the difference between the factors with and without statistically significant changes in the

Table 8. Results of the inductive contents analysis on the changes in learning attitudes due to participation in the program.

| Raw data (n)	Detailed area (n) / word cloud	General area (%)
(12)	Expecting improved grades (5) / Grades Looking after school credits (4) / Credits Doing assignments (3) / Assignment	Improving grades (22.2%)
(12)	Not pushing off work (3) / Work Time management (2) / Time Making a plan (4) / Planning Making goals (3) / Goals	Following through with plans (22.2%)
(9)	Not sleeping during class (3) / Sleep Not using cellphone (2) / Phones Taking notes (3) / Notes Being prepared (1) / Prepared	Ideal class participation (16.7%)
(9)	Improving focus (6) / Focus Paying attention (2) / Attention Understanding core concepts (1) / Concepts	Improving concentration (16.7%)
(8)	Active participation (3) / Active Participating in group activities (1) / Participation Managing attendance (2) / Attendance Reporting before and after competition (2) / Reporting	Class participation (14.8%)
(4)	Positive thoughts (2) / P_thoughts Improved self-confidence (2) / Confidence	Positive psychology (7.4%)
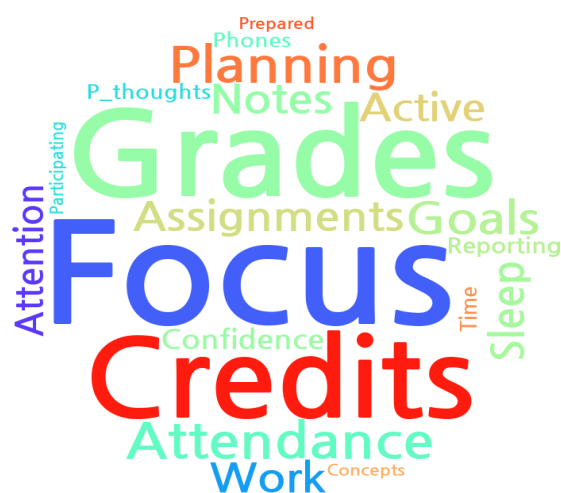
Figure 6. Word cloud on the changes in learning attitudes due to the PEAK program.

pre-post analysis. Goal-setting, time management, and stress management, factors in which statistically significant changes were confirmed, are skills in which we can expect a change in a relatively short time period as compared to the other skills. The other skills may be more difficult to influence because of the personal nature of their cognitive and emotional basis. Additionally, previous research has called these factors a "psychological core," which requires more long-term interventions and changes in the person's environment to initiate lasting

personality changes [22]. Specifically for communication, as it is a two-way transaction, the reactions of others can make it considerably difficult to initiate changes.

The results of qualitative data analysis showed that the study participants evaluated "self-understanding" (24%) as the most memorable life skill. This is because the participants were able to expand their self-awareness through their participation in the program. For instance, they stated that from being limited to "I as a player," their perspective broadened to incorporate "I in life (school, everyday)"; this was evaluated as their most valuable experience during the program. During the individual interviews, the participants responded that they lacked the opportunity and ability to look at their future broadly or to reflect on themselves, and that they reflected only on shortsighted goals, such as entrance exams or gold medals in the next competition.

Self-understanding can be the starting point for life skills development and self-improvement. This is because in the process of learning life skills and transferring them to life, it is important to be aware of what you learn, and what that learning means to you [8]. For this reason, life skills programs such as SUPER [10] and The First Tee [12] treat self-interest as a critical factor to be developed in the educational content. Similarly, in this study, we focused on self-understanding as an important life skills factor to improve in order to enhance the other life skills.

Participants in the study showed psychological changes, in positive thinking (20%), increased productive behavior (15%), and preparation for future careers (15%). The participants highlighted that they had more positive experiences in social interactions (23%), such as they were better at conflict resolution with others and that their interpersonal skills improved as they learned to understand and recognize others. Conflict resolution and interpersonal skills, included under "social interaction," can be perceived to change quickly because it is easy to immediately apply the new skills learned. We believe the main reason for this perception of change can be found in the intentional efforts undertaken through the assignments of the workbook and the interactions with the helping mediators, who set the environment for modeling and debating, similar to other life skills programs [23].

The life skills workbook served as a link to routinized social, cognitive, and behavioral life skills learned in sports situations and applied to life [17, 24]. Early life skills programs such as SUPER [10], DC [13], and The First Tee [12] emphasized the use of workbooks to enhance learning effectiveness. Accordingly, the PEAK program utilized a workbook that considers the environment and context of the student-athlete, who is a research participant, and includes and provides explicit learning goals.

Program moderators are the most important at many phases of the program, and for the application of strategies for life skills development [25, 26]. It has been reported that the mediator can improve the quality and effectiveness of the program [27]. The role of mediators is crucial as they help individualize each participant's experience. Moreover, their interactions with individual participants help the participants understand the application and use of the life skills in their own lives with more clarity [28]. The mediators of the PEAK program in this study focused on reminding the student-athletes about life skills inherent in their past and building upon these experiences, rather than teaching new life skills. In addition, an emotional rapport with the mediator was formed, which helped encourage the participants during any difficulties.

The PEAK program was found to be effective in the learning attitude, specifically in the areas of interest, attention, and motivation. Although the motivation for achievement was statistically insignificant, the average scores measured after the program were higher than before the program; this result is similar to that of Lim's research [17], who applied the PEAK programs to taekwondo major college students.

Researches applying the DC program reported that athletes' time management ability, stress management and balance, goal-setting, self-confidence, and control were used positively in academic and general fields, but not in sports [13]. Play It is another program that is consistent with our study. A research reported higher school performance, Scholastic Aptitude test scores, and enrollment rates than other general students for American football players participating in the Play It Smart program [29].

We think the reason why there was no significant change in the motivation for achieving learning attitude is related to the timing of the application.

Ideally, the program would begin at the start of the university semester and help the student-athletes prepare for the whole semester. However, the start of the program in our study was delayed until halfway through the semester (at eight weeks, in a 16 week semester) due to the process of dealing with administrative procedures with the officials (student life counseling center, physical education support team, and team leader). Therefore, the student-athletes' poor academic performance relating to assignments, attendance, and exams in the first eight weeks had already negatively impacted the final outcome of the semester. In other words, it was difficult to expect an improvement in academic achievement for the other half of the semester because the players had already participated in half of the semester with their existing learning attitude (e.g., absenteeism, poor attitude, etc.) and with little interest in securing good grades. In future studies, we hope to rectify this issue by preparing well in advance so that the program can correspond with the start of the university semester.

The qualitative data showed that the participants negatively assessed their learning attitude in areas such as poor class attitude (43.5%) and decreased attention (19.6%) before participating in the program. However, they stated that after participating in the PEAK program, their learning attitude for the next semester would be positively impacted in terms of planning and following through (22.2%), improving grades (22.2%), and in a more desirable attitude toward class participation (16.7%). Here, it is worth noting that the participants stated that the program had a big impact on their ability to plan (i.e., goal-setting), which is one of the main goals of the PEAK program.

The PEAK program provides a systematic process of understanding, practice, and application to help players realize their potential and transfer it to a new environment [17]. This course aims to ensure that student-athletes maintain a good balance between sports and academic performance while learning to be a successful athlete. Furthermore, it is expected that the participants can understand and practice these life skills not only in the academia and sporting arena, but also in their daily lives.

The mediators put a lot of effort into using intentional strategies to encourage participants to stay away from their existing habits or comfort zones, through the four strategies suggested for purposive practice [30]. First, we set specific goals for improving life skills and learning attitude. A reflection journal was used to help players focus on their changes, which provided immediate and specific feedback on reflection and how to induce change. Then, the participants created intentional situations to escape from their comfort zone and practiced these situations using the workbook. The mediator's intentional strategies helped enhance the value of the life skills and promote positive development by allowing study participants to consciously practice life skills.

In summary, the PEAK program had a significant effect on improving the life skills and learning attitude of college athletes, and extended the findings of a previous study [17] that applied the PEAK program on taekwondo student-athletes. In this study, the possibility of generalization was confirmed by expanding the number of student-athletes from taekwondo to nine sports. This study employed additional strategies to help improve the program by the mediators. Furthermore, it integrated quantitative and qualitative research methods to gather evidence to further improve the application of the program in the future. Even though there were no dramatic changes due to the program, it seems to have had a positive effect on the student-athletes, positioning them to take better control of their lives and create a balance between their academia, sporting responsibilities, and daily lives. In particular, the program seemed to help student-athletes participate in the life skills program as a model of civic society [31]. In short, it can help student-athletes develop into adults with stronger competencies such that they can be more constructive members of the society.

CONCLUSIONS

The PEAK program is effective in changing the life skills of college athletes, particularly in goal-setting, time management, and stress management. Additionally, the PEAK program is effective in changing the learning attitude of college athletes in terms of overall learning attitude, interest, attention, and motivation to learn. Thus, the PEAK program had a positive effect on college students' life skills and learning attitude. Through this study, it was confirmed that the life skills PEAK program can be suitably introduced in Korea to promote the balanced development of student-athletes' sports and daily lives.

LIMITATIONS AND RECOMMENDATIONS

Based on the conclusions drawn from this study, a few suggestions for follow-up studies are to be noted. First, in order to facilitate group activities for participants, active support from teams and leaders must be guaranteed. Adjusting the team's schedule was the main obstacle to the smooth running of the program in this study. Student-athletes are trained and compete in teams; hence, even if the athletes' individual willingness to participate is high, their participation in the program would be limited without the support of their teams and coaches. Therefore, follow-up research will be able to run the program more smoothly if the program times are more secure, and if there is active support from the team coaches during the research design stage. This will allow more access to the athletes when the training is less intense, such as the off season.

Second, the program should be started at a time that is the most effective, such as before or at the start of the semester, thereby helping to create a positive environment and attitude for the students to apply for the entirety of the semester.

Third, in order to objectively verify the effectiveness of the program, it is necessary to measure behavioral changes through observation. In this study, the PEAK program positively changed the life skills and attitudes of the study participants. However, because these results were based on self-evaluations by the study participants through self-report tests, it was difficult to interpret the extent to which the life skills transferred to other areas of their lives [5]. Therefore, future research should consider the opinions of those directly surrounding the participants, such as their team coaches, family, and friends to accurately quantify the effect of the program.

Fourth, as it is difficult to evaluate whether the program has any lasting effects, it would be interesting if a longitudinal study design is adopted with a series of follow-up analyses of the participants six months or a year after participation. Furthermore, refresher courses and support counseling to remind the participants that self-improvement is a constant endeavor to be a better person could help amplify the effect of the program.

HIGHLIGHTS

- Student-athletes should participate in professional psychologically guided life skills leasons programs to help balance scholastic and sporting workloads.

- This study shows the efficiacy of guided life skills programs on the overall learning attitudes, interest, attention, and motivation for further learning of student-athletes.

- Additionally, this study showed the potential for the PEAK program to improve other aspects of student-athletes' daily lives.

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