

A Study on the Effects of Taekwondo on the Physical and Mental Health of Teenage Trainees

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ABSTRACT: The purpose of this study is to compare the training goals and methods of Taekwondo studios in the United States and Korea, and to identify the effects of Taekwondo on the physical and mental health of teenage trainees. Taekwondo, as a traditional Korean martial art, emphasizes not only physical training but also mental discipline. As Taekwondo has expanded globally beyond Korea, comparing the training methods of the birthplace of Taekwondo (Korea) and the United States can help identify ways to improve the health of trainees. For this study, surveys were conducted with 60 high school Taekwondo trainees in the U.S. and Korea, and interviews were also held with 6 Taekwondo instructors and 12 trainees. The results showed that the training objectives, content, duration, and methods differ between the two countries. In the U.S., Taekwondo focuses primarily on physical training as a sport, whereas in Korea, it integrates traditional cultural values, emphasizing not only physical training but also mental aspects such as ethics, filial piety, and order. The findings of this study suggest ways to incorporate Korea's approach to mental health training into the U.S. Taekwondo practice, offering methods for balanced physical and mental development in adolescents.

KEYWORDS: Taekwondo, Physical Health, Mental Health, Stress Management, Self-Esteem.

■ Introduction

Taekwondo Growing as a Global Sport:

Taekwondo is a sport practiced by more than 100 million people worldwide and is actively practiced in 213 countries.¹ Especially, in the United States, 30,000 instructors are running Taekwondo academies, and the cumulative number of practitioners has exceeded 4 million.² Taekwondo studios in Korea not only focus on teaching Taekwondo and promoting health but also emphasize values such as filial piety, morality, and mental discipline, which contribute to mental health. Furthermore, they foster networking effects between students, parents, and the local community. Taekwondo has also had a positive impact on helping students grow into responsible members of society. The role of Taekwondo has expanded beyond physical training to include the cultivation of virtues such as courtesy, honesty, tolerance, and self-discipline, which are essential for forming social relationships. Additionally, its benefits for both physical and mental health have increased social expectations.³ The social values of Taekwondo, which contribute to creating responsible members of society and promote balanced physical and mental health, are recognized internationally.⁴

In the United States, Taekwondo has a significant impact on both the community and families. Many areas lack evening programs after school, so for dual-income families, Taekwondo academies are being used as after-school childcare facilities. In response to this need, these academies are continuously developing programs at the level of after-school education centers,⁵ while Taekwondo's popularity among adults in the U.S. fosters family bonding, as fathers and sons, as well as grandfathers and grandsons, train together. This not only strengthens family ties

but also helps foster the development of proper family relationships, including values such as filial piety, respect, and honor.

The effects of Taekwondo training on physical and mental health:

Taekwondo is known for its combination of physical exercise, mental discipline, and self-defense techniques.⁶ Emphasis on high-intensity training and dynamic movement patterns of Taekwondo contributes to numerous physical health benefits. According to the results of a meta-analysis of various studies on the physical effects of Taekwondo, Taekwondo training during adolescence has a positive impact on muscle strength, muscular endurance, cardiovascular endurance, explosive power, agility, and flexibility. Since Taekwondo is a martial art that involves full-body training, it actively stimulates the organs and functions of various respiratory and circulatory systems within the body, aiding in metabolism.⁷ In particular, it can significantly strengthen the respiratory system. Additionally, the harmonious functioning of the nervous system is required for the full-body muscle activity and quick, accurate decision-making and execution, which is actively engaged and enhanced, highlighting the unique characteristics of Taekwondo.⁸ Additionally, it is effective in improving obesity and stimulating the secretion of growth hormones.⁹ There are many studies on the mental effects of Taekwondo, and research has shown that Taekwondo training has a positive impact on reducing stress and enhancing self-esteem in adolescents. It also contributes to improving mental quality of life by alleviating symptoms of depression and reducing anxiety.¹⁰ In this way, Taekwondo helps develop both physical abilities and social skills. Through Taekwondo training, mental development is supported in

terms of cognitive aspects and emotional stability, which enhances quality of life and plays a key role in developing social relationships.¹¹ The effects of Taekwondo are well reflected in the fundamental goals of Taekwondo education. Taekwondo education aims to intentionally cultivate individuals who are mentally, physically, and socially desirable. Each Taekwondo movement or educational activity is assessed for its educational value, and the teaching and learning processes are evaluated to determine if they help transform practitioners into individuals with positive traits. This value-based education is essentially a process of intentionally changing one's character, abilities, attitudes, habits, and beliefs. Ultimately, Taekwondo training during adolescence can contribute to maintaining a healthy state both physically, mentally, and socially.¹²

The Necessity of Research:

According to previous studies, Taekwondo training helps improve both physical and mental health; however, the degree of improvement may vary depending on the training objectives, methods, and country. In South Korea, the birthplace of Taekwondo, emphasis is placed on social maturity, such as courtesy, filial piety, and morality, while Taekwondo studios in the United States focus more on physical health.¹³ Certainly, some studies show Taekwondo training in the United States also contributes to mental health. Adolescents who practiced Taekwondo in the U.S. scored higher in stability, autonomy, sociability, activity, and courtesy compared to those who did not train. Additionally, sub-factors of mental health, such as interpersonal sensitivity, depression, hostility, anxiety, and somatization, were found to be lower in those who practiced Taekwondo.¹⁴

However, the extent to which Taekwondo training improves mental and physical health may vary depending on the goals and programs of Taekwondo education. Comparing the Taekwondo training programs of the two countries highlights the need for further research. Based on an analysis of Taekwondo programs from six studios in South Korea and the United States, Table 1 highlights the differences in program duration and session content. The Taekwondo program in South Korea typically lasts 60 minutes. The first 5-10 minutes are dedicated to light warm-up exercises, followed by Taekwondo training. The last 5-10 minutes involve discipline and communication between the instructor and the trainees before the session ends. In the United States, the classes are usually 45 minutes long, with 5 minutes allocated for warm-up and 40 minutes for training. The difference in mental health-related factors lies in the last 5-10 minutes, which are excluded from Taekwondo training in the U.S. The last session of the Taekwondo program in Korea goes beyond everyday conversation and serves an educational purpose. The content of the last session includes activities such as meditation, moral and etiquette education, gratitude towards parents, and leadership training. To conduct these sessions, instructors often receive specialized training from professional organizations or obtain relevant certifications.

Table 1: A comparison of Taekwondo programs in South Korea and the United States.

South Korean programs are longer and emphasize both physical and mental training, while U.S. programs focus more on physical training.

Program/Day		United States (45 minutes)	South Korea (60 minutes)
Warm-up	Stretching, Joint rotations, Breathing exercises	5 min	5 ~ 10 min
Training	Forms, Attack and Defense, Board breaking, Demonstration, Cool-down exercise	40 min	45 min
Supplementary training	Meditation, Self-reflection, Communications Discipline (Etiquette, Filial piety, Self-esteem)	-	5 ~ 10 min

* Analyzed US (NC, Texas) and Korea (Seoul, Gyeonggi Province) Taekwondo Studios' programs.

* Refer to studies on Taekwondo programs from the United States¹⁵ and South Korea.¹⁶

■ Methods

The object of study:

The study was conducted at 6 Taekwondo studios in the United States and South Korea. To ensure the objectivity of the data, the research was carried out across three studios in Texas and North Carolina in the U.S., and three studios in Seoul and Gyeonggi Province in South Korea, with both surveys and interviews being conducted. As shown in Table 2, the surveys and interviews were conducted with high school Taekwondo trainees and their instructors. Among the survey participants of trainees, 36 were male and 14 were female, aiming to include a diverse range of perspectives. However, due to the low number of female high school trainees, achieving gender balance was difficult.

Table 2: Interviewee and survey participant information from South Korea and the United States.

Participants from both countries showed a similar demographic balance, but Korean trainees had a longer average training period (5.2 years) compared to those in the U.S. (3.4 years).

	Country	Trainees				Instructors			
		No	Age	Gender	Training Period	No	Age	Gender	Coaching Period
INTERVIEW	US	1	15	Female	3 years	1	41	Male	11 years
		2	16	Female	2 years				
		3	16	Male	2 years				
		4	17	Male	4 years	2	36	Male	7 years
		5	17	Male	7 years				
		6	18	Male	5 years	3	33	Female	3 years
	Korea	7	15	Female	5 years	4	42	Male	15 years
		8	15	Male	8 years				
		9	16	Female	3 years				
		10	16	Male	6 years	5	31	Male	5 years
		11	16	Male	7 years				
		12	17	Male	10 years	6	29	Female	5 years
SURVEY	Country	Headcount	Male / Female		Average Age		Average Training		
	US	30	19 / 11		16.5		3.4 years		
	Korea	30	23 / 7		16.0		5.2 years		

Research tools:

This study combined qualitative and quantitative research methods to compensate for the lack of survey data. The qualitative research focused on conducting interviews with Taekwondo instructors and trainees in the United States and South Korea to identify the specific outcomes of physical and mental improvements felt by the participants and the purpose of the Taekwondo programs. Interviews were conducted face-to-face whenever possible based on the questionnaire in Table 3, and for Korean students who could not meet in person, phone and email interviews were conducted. For the

U.S. instructors and trainees, questions were sent via email a few days before the interview, which was conducted in person. The survey was distributed via email not only to the interview participants but also to high school trainees from the same Taekwondo studio. The email provided a detailed explanation of the study's purpose and objectives, the definitions of physical and mental health, and the differences between Taekwondo programs in South Korea and the United States. The study proceeded only after obtaining the participants' consent and in compliance with research ethics.

Table 3: Interview Questions for Taekwondo Instructors and Trainees. The questions explore Taekwondo's health effects and identify areas for improvement.

No	Interview Questions
1	What is the purpose of training Taekwondo?
2	What are the effects of Taekwondo training on physical health?
3	What are the effects of Taekwondo training on mental health?
4	Are there training programs specifically designed to improve physical/mental health?
5	What aspects of Taekwondo should be improved to enhance physical/mental health?

* The survey questionnaire is attached in a separate file.

Data Analysis:

Based on the analysis results of the 5-point scale survey, the differences between Taekwondo programs in the United States and South Korea were identified, and further research results were derived by incorporating the interview findings. The interview results were obtained by integrating the content recorded during face-to-face interviews and the responses received via email, from which key responses for each question were extracted. Discrepancies between the survey results and interview responses were addressed through additional interviews to identify the underlying causes. To explore the relatively under-researched impact on mental health in more depth, survey items related to self-esteem,¹⁷ sense of belonging, and stress relief, which had been frequently highlighted in previous studies,¹⁸ were added. However, variables related to mental disorders, such as depression and anxiety, were excluded as they do not align with the research objectives. Additionally, correlation analysis of the survey results was conducted using SPSS, and the study identified how factors such as country, age, gender, and training duration impact health improvement.

Research Ethics:

This study complied with the following research ethics. First, before conducting interviews and surveys, participants were explained in detail about the purpose of the study, the plan to use the results, and the sharing of the results, and their voluntary consent was obtained. Second, after making sure that the participants understood prior information before the interview, they were guided not to include responses if they felt uncomfortable during the interview or did not want their responses to be used in the study. Third, for the privacy protection of interviewees, the interview was conducted in a personal environment, and all names were anonymized. Finally, it was informed that the interview and survey results would only be used in the study, and it was communicated that they would not be disclosed to the outside for purposes other than the study.

Results

The significance between variables and outcomes was confirmed through correlation analysis, and the research results are organized in sequence based on the interview and survey responses. Additionally, the interviewees' thoughts and opinions on Taekwondo training are directly quoted. The survey questionnaires on mental health utilized questions related to stress, self-efficacy, and psychological stability from the previously validated questionnaires, Youth Mental Health Risk Assessment (YMHRA)¹⁹ and Mental Health Inventory for Adolescents (MHIA).²⁰ The mental health level was derived from the average scores of these three questionnaires. According to the correlation analysis in Table 4, the effect of Taekwondo on physical health showed no significant differences across country, gender, or training period. On the other hand, the effect on mental health showed a strong correlation with country (0.603) and training period (0.683).

Table 4: Results of the analysis on the correlations between the variables (N=60).

Notable correlations include a moderate positive relationship between mental health and training period (0.683) and between mental health and country (0.603).

	1	2	3	4	5
1. Physical Health	1				
2. Mental Health	0.122	1			
3. Country (US/KOR)	-0.067	0.603	1		
4. Gender (Male/Female)	-0.117	-0.256	-0.145	1	
5. Training Period	0.097	0.683	0.431	-0.445	1

A T-Test was conducted, as shown in Table 5, to confirm the difference in perceptions between the United States and Korea on the effects of Taekwondo on health. Both groups reported similarly high physical health scores (U.S. M = 4.57, Korea M = 4.50), with no significant difference, $t(58) = 0.51$, $p = .61$, suggesting a shared recognition of its physical benefits. However, Korean participants reported significantly higher mental health benefits (M = 4.30) than U.S. participants (M = 3.73), $t(57) = -5.76$, $p < .001$. This may reflect cultural differences in the way Taekwondo is taught and understood. Overall, physical benefits are consistently acknowledged in both countries, but perceptions of mental health vary by context. American Taekwondo programs can benefit from introducing Korean mental health programs.

Table 5: T-Test results comparing health perceptions between the U.S. and Korea (N=60).

The t-test revealed no significant difference in physical health between the U.S. and Korea. However, mental health perceptions were significantly higher in Korea compared to the U.S.

	Physical Health		Mental Health	
	US	KOREA	US	KOREA
Mean	4.57	4.50	3.73	4.30
Variance	0.25	0.26	0.17	0.12
Number of Observations	30	30	30	30
Hypothesized Mean Difference	0.00		0.00	
Degrees of Freedom	58.00		57.00	
t-statistic	0.51		-5.76	
P(T <= t) (One-tailed test)	0.31		0.00	
t Critical (One-tailed test)	1.67		1.67	
P(T <= t) (Two-tailed test)	0.61		0.00	
t Critical (Two-tailed test)	2.00		2.00	

The Effect of Taekwondo on Physical Health:

Survey results in Table 6 showed that both American and Korean trainees agreed that Taekwondo training has a high impact on physical health. American trainees rated it 4.6 out of 5, while Korean trainees rated it 4.5, showing little difference. These results are consistent with previous studies that have highlighted the physical health benefits of Taekwondo. In the interviews, instructors from both countries emphasized that improving physical health is a key goal of Taekwondo training, and both the training methods and the training duration are focused on enhancing physical health.

Table 6: Survey results on the effect of Taekwondo on physical health (N=60, US and Korea).

The survey results show Taekwondo similarly improves physical health in the U.S. and Korea.

Survey Question	Average (US / KOR)
Taekwondo training helps in improving physical health.	4.5 (4.6 / 4.5)

* Five-point rating scale: 1point (Strongly Disagree) ~ 5point (Strongly Agree)

"Taekwondo training is systematic and diverse compared to other school sports. The warm-up exercises vary depending on the day's training content, starting with joint-specific preparations and muscle relaxation. When practicing forms, flexibility exercises are emphasized, while during breaking practice, the focus is on wrist and ankle care. Since Taekwondo is a martial art, there is a risk of injury, which is why the training is conducted according to a well-prepared process, guided by the instructor, to ensure safety." (US, Trainee)

"After becoming a high school student, the amount of academic work increased, and the opportunity to exercise decreased. Taekwondo training is the only time during the day when I can work out intensely and sweat. Although it is high-intensity exercise, I can train systematically and safely under the guidance of the instructor, and I don't feel much muscle pain or fatigue afterward." (Korea, Trainee)

"All training follows a manual. To prevent injuries and maximize exercise effectiveness in a short period, we apply years of accumulated experience and training methods. The Taekwondo Association shares these training methods with Taekwondo schools worldwide, and new training techniques are studied through seminars and forums." (Korea, Instructor)

The Effect of Taekwondo on Mental Health:

While both the United States and South Korea showed positive survey responses regarding the impact of Taekwondo on physical health, there was a significant difference in the reported effects on mental health. As shown in the results of Table 7, the United States scored 3.7 out of 5, while South Korea scored 4.3, showing a 0.6-point difference. When comparing the four elements of mental health, there was little difference between countries in terms of stress relief, but significant differences were observed in self-efficacy, sense of belonging, and psychological safety. Based on the interview results, stress relief can be seen as a secondary effect of physical exercise, while the other elements are developed through mental training or extra activities.

Table 7: Survey results on the effect of Taekwondo on mental health (N=60, US and Korea).

The survey results show that Taekwondo training positively impacts mental health, with Korean participants reporting higher ratings, especially in self-esteem and sense of belonging.

Survey Question	Average (US / KOR)
Taekwondo training helps in relieving stress.	4.2 (4.1 / 4.3)
Taekwondo training helps in enhancing self-esteem.	4.0 (3.7 / 4.3)
Taekwondo training helps in improving a sense of belonging.	4.1 (3.6 / 4.5)
Taekwondo training helps in promoting psychological safety.	3.8 (3.5 / 4.1)
Average	4.0 (3.7 / 4.3)

* Five-point rating scale: 1point (Strongly Disagree) ~ 5point (Strongly Agree)

Both in the United States and South Korea, the opinion was that the stress relief effects of Taekwondo training are similar to those of general exercise, such as improved circulation, a sense of refreshment, and the promotion of hormones like dopamine and serotonin.²¹

"There have been many studies showing that exercise has a positive effect on stress relief, and the same effect is seen in Taekwondo. When considering the unique stress-relief benefits of Taekwondo, many believe that the lack of stress from competition, due to the focus on self-discipline, contributes to this. Additionally, stress is relieved through safely conducted activities like breaking and striking. Exercising, sweating in a healthy way, and completing the targeted workout all contribute to a high level of stress relief." (US, Instructor)

Self-esteem, sense of belonging, and psychological safety are significantly higher in South Korea compared to the United States, with many attributing this difference to the additional mental training conducted alongside physical training. In Korean Taekwondo schools, mental training typically takes place on specific days of the week, focusing on themes such as confidence, leadership, and ethical awareness, and lasts about 10 minutes each day. In addition, instructors and trainees, as well as fellow trainees, share their daily experiences and discuss and consult on psychological difficulties together. Specialized programs like meditation are also considered helpful for mental health.

"After the workout, a lot of preparation is made for the last 10 minutes of mental training. Especially since high school trainees are in their adolescent years, conversations and advice need to be handled carefully. Nevertheless, most trainees listen attentively and empathize. Rather than one-sided lectures, positive examples and desirable directions are shared naturally. Sometimes, even if it's unrelated to the theme, practitioners share challenges they faced during the day, and the group helps each other come up with solutions." (Korea, Instructor)

"The meditation conducted at the end of Taekwondo training is the best part. Listening to calming music while the instructor shares thoughts to wrap up the day helps me feel at peace. I've heard that the instructors have obtained certifications in meditation. Even everyday conversations bring a sense of calm to the mind. Listening to my friends' struggles and talking with them helps us comfort and support each other. Sometimes, conversations with the instructor and friends feel more comforting than with my parents." (Korea, Trainee)

Thematic analysis of interview data from 18 Taekwondo instructors and trainees identified four recurring themes: structured and safe training, physical stress relief, mental stability

and psychological safety, and a sense of community. Based on the results, Korean respondents emphasized mental training and emotional support integrated into Taekwondo training, whereas American respondents emphasized the physical benefits of regular physical activity. These differences stem from cultural and program contexts, suggesting that personalized training programs and policy designs are needed to achieve maximum benefits in each setting.

Table 8: Thematic Coding of Interview Responses on Taekwondo's Health Effects (N = 18).

The coding results show that Korean respondents emphasized both physical and mental training, while the US respondents focused on physical benefits.

Theme	Similarities and Differences	Keywords
1. Structured and safe training	Common theme (emphasized in both Korea and the US)	Systematic training, safety, instructor guidance
2. Physical stress relief	Common theme (exercise-related stress relief emphasized by both)	Sweating, healthy exercise, stress reduction
3. Mental stability and psychological safety	More structured and emphasized in Korea	Meditation, mental training, emotional care
4. Sense of community	Strongly emphasized in Korea	Peer support, empathy, sharing experiences

■ Discussion

How to improve physical health in adolescents through Taekwondo:

According to a survey conducted on the areas adolescents specifically want to improve among the physical benefits of Taekwondo training - Endurance, Flexibility, Cardiopulmonary function, and Strength which identified in existing research²² - male practitioners wanted to enhance Strength, with 67% expressing this preference, while female practitioners wanted to enhance Flexibility, with 72% expressing this preference. According to Table 9, there was no significant difference in the demand for physical health improvement between trainees in Korea and the United States. Additionally, 15% of respondents indicated that there is nothing to improve in Taekwondo for physical health, suggesting that some trainees are satisfied with their current training methods.

Table 9: Survey results on the most needed physical training improvements (N=60, US and Korea).

The results show that males mostly need strength training, while females prioritize flexibility.

	Endurance	Flexibility	Cardiopulmonary	Strength	None needed
Male	1 (2%)	3 (7%)	2 (5%)	28 (67%)	8 (19%)
Female	0 (0%)	13 (72%)	1 (6%)	3 (17%)	1 (6%)
Total	1 (2%)	16 (27%)	3 (5%)	31 (52%)	9 (15%)

Since the survey was conducted on adolescents, there was a higher interest in improving appearance and body shape rather than in intense exercises aimed at strengthening basic physical fitness. Because the time available for exercise during the day is limited, there is a strong demand for increasing strength and flexibility through Taekwondo training. When asked about the exercise they would most like to do besides Taekwondo, males selected bodybuilding, and females chose yoga and Pilates, which aligns closely with the survey responses.

"Many adolescent trainees have expressed a desire to strengthen their muscles, so recently, exercises such as push-ups, squats, lunges, and planks have been incorporated into Taekwondo training for about 5 to 10 minutes. To prevent injuries and ensure effective training, all instructors have learned teaching methods from a pro-

fessional trainer, and the trainees' responses to the strength training have been generally positive." (Korea, Instructor)

"Adding other exercise methods within the limited time of about 40 minutes is not easy. We tend to focus on the various content that needs to be taught within Taekwondo itself. I understand the high demand among adolescents for strength and flexibility training. It seems beneficial to try new exercises that trainees want to incorporate during breaks in Taekwondo training." (US, Instructor)

"The Taekwondo program is well-designed for physical health. Especially, learning martial arts not only strengthens the body but also enhances mental toughness. However, Taekwondo training has a lower intensity compared to outdoor sports like soccer or athletics. Because of this, I considered switching to bodybuilding or personal training for strength training. I've heard that Taekwondo gyms in Korea offer additional strength training programs. It would be great if a strength training program could be added and supplemented at the Taekwondo instructor level." (US, Male Trainee)

"Honestly, Taekwondo is a type of martial art that is male-dominated, and the number of female trainees tends to decrease after high school. While flexibility is required for kicks and movements, and it's not difficult for women to learn, training alongside men can be challenging due to the program's structure. There are many aspects in which Taekwondo needs to change to better cater to women's physical training. If possible, it would be great to create a separate Taekwondo program for women. If the program includes patterns and movements more suitable for women, as well as incorporates yoga or Pilates exercises, which are highly requested by women, I believe more female trainees would participate." (Korea, Female Trainee)

How to improve mental health in adolescents through Taekwondo:

Some studies suggest the physical training of Taekwondo helps reduce stress and alleviate depression, improving mental health,²³ but there are not many existing studies on the effects of Taekwondo's mental training programs. In this study, through interviews with Korean instructors, mental health-related content was identified from the supplementary programs currently offered in Taekwondo studios, and a survey was conducted based on these programs.

Table 10: The definition of mental health programs conducted during Taekwondo training in Korea.

Definitions were provided to help survey respondents understand each program.

	Definition
Meditation	Focusing the mind in a calm state to restore mental stability and comfort.
Leadership	Sharing examples of good leaders and discussing the virtues should learn.
Social skills	Lectures on gratitude towards parents and teachers, and on ethics and morals.
Relationships	Sharing the daily routine and having an open conversation to solve concerns.

The survey results showed no significant differences based on gender or country. For trainees in the United States, where mental health improvement programs were not available, brief descriptions of each program were included in the survey, as shown in Table 10.

Table 11: Survey results on the most needed mental training improvements (N=60, US and Korea).

The results show that meditation is the top mental training need, followed by relationship improvements and leadership.

	Meditation	Leadership	Social skills	Relationships	None needed
Male	19 (45%)	7 (17%)	1 (2%)	12 (29%)	3 (7%)
Female	9 (50%)	2 (11%)	0 (0%)	6 (33%)	1 (6%)
Total	28 (47%)	9 (15%)	1 (2%)	18 (30%)	4 (7%)

The survey results in Table 11 showed that meditation was the most preferred program, with 47%, followed by the relationship between instructors and trainees, which was favored by 30%. In addition, the survey results indicated that leadership and social skills scored somewhat lower, with instructors analyzing that this was due to the survey participants being high school students. It was observed that while social skills and leadership are well-received by younger students, the demand for these programs may be lower among more mature high school students.

"Meditation is conducted twice a week, and most trainees, regardless of gender, enjoy it. Korean high school students are mentally exhausted due to studying and preparing for university entrance exams. Because of this, the focus is on improving mental health through meditation rather than strict discipline or guidance. Some trainees have expressed a desire for daily meditation sessions, so the instructors are working to enhance the quality of the meditation program by studying specialized programs and seeking better content." (Korea, Instructor)

"Through this interview, I was able to understand the differences in programs between Korea and the United States, and I was quite surprised to learn that trainees have a high level of interest in mental health improvement programs. While I would like to include mental health improvement programs, it seems difficult to extend the overall program duration. However, we can complement this through online programs or special seminars, similar to what was used during the COVID-19 period. In particular, meditation has gained significant attention in the United States recently, and I feel there is a pressing need to implement it quickly." (US, Instructor)

"Meditation at the end of training is beneficial, but even a short amount of time for trainees to talk about their daily routines under the guidance of the instructor also contributes to mental health. They exchange thoughts on each other's concerns, and instructors often offer solutions based on their own experiences. In fact, conversations between Taekwondo trainees are much more comfortable than those with parents, teachers, or school friends. The reason the relationships at the Taekwondo studio feel more comfortable than those with school friends or teachers is that there is no competition or conflicting interests among the friends there." (Korea, Female Trainee)

"After hearing about the mental health programs at Taekwondo studios in Korea, I thought it would be great to introduce them in the United States as well. While it's common to meet friends from the same school at Taekwondo studios, there is no relationship building outside of the sport. Also, in the U.S., there are no separate Taekwondo classes for high school students, so it might be difficult to have meaningful conversations based on shared experiences. I strongly support the idea of extending training time and creating a separate class for high school students. Training and communicating

with peers of a similar age group would be a wonderful experience." (US, Male Trainee)

■ Conclusion

This study confirmed that Taekwondo training has a positive effect not only on physical health but also on mental health improvement. Through the analysis of differences by country, it was found that Taekwondo studios in the United States are relatively lacking in mental health programs, and both instructors and trainees were supportive of enhancing mental health improvement programs. According to an open-coding analysis of interview data, both Korean and American trainees recognized Taekwondo training as a systematic, safe, and physically healthy activity. The topics commonly mentioned by the trainees from both countries included systematic warm-up, injury prevention, and physical improvement. However, in terms of mental health, the difference was seen. While Korean trainees emphasized more structured mental training, such as self-esteem, belonging, emotional support, meditation, and group reflection, these factors were relatively less mentioned among American trainees. This suggests a culturally embedded approach to mental health in Korean taekwondo training.

Additionally, the specific needs of high school trainees were identified. Physically, they desired strength and flexibility improvement, while mentally, there was a need for meditation and relationship-building programs. However, to implement mental health improvement programs, a comprehensive overhaul of the Taekwondo programs in the United States is necessary. First, training time should be extended by 5 to 10 minutes, and in addition to the current classes for child trainees, separate classes for high school students should be created. Moreover, instructors will need additional training and knowledge to run mental health improvement programs. To support this, instructors should be provided with educational opportunities to enhance their expertise in areas such as meditation and counseling.²⁴ Furthermore, collaboration between Taekwondo associations and local studios is essential to support the development of instructors' capabilities.²⁵ Taekwondo may not be able to meet all the needs of high school trainees. However, by referencing successful examples from other countries, continuously seeking areas for improvement, and embracing change, Taekwondo will become a program that is loved across nations and generations.

The current study provides valuable insights into the impact of Taekwondo training on mental health, future studies plan to apply a more experimental approach. Specifically, I would like to have a stronger understanding of the effectiveness of implementing and evaluating mental health training programs through pre- and post-intervention designs within Taekwondo institutions. This approach will provide clear evidence of the effectiveness of mental health programs in Taekwondo and is expected to help with future training programs and policy proposals.

■ Acknowledgments

I sincerely appreciate the head instructor of VTS Taekwondo Studio in Korea, the instructors in the United States, and the Taekwondo studio friends who took the time to help with the survey. I would also like to extend a special thank you to my mentor, Hyunjun, for guiding me in the analysis of the survey results and interview methods.

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