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Followership, Stress, Empowerment, and Organizational Commitment in Leaders of Korean Martial Arts Athlete

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Abstract

Purpose: Korean judo and taekwondo are traditional martial arts disciplines with strong track records at the Olympic and World Championships. Korean judo athletes have proven their international competitiveness by winning many medals for their technique and skill, while taekwondo has also won many medals and gained global recognition. South Korea's martial arts disciplines are grounded in tradition and philosophy, and continue to develop and advance through research and investment. Therefore, we wanted to explore the characteristics of martial arts practice through a survey of university student martial arts athlete in South Korea.

Method: This study analyzed the general characteristics of the subjects, differences between variables, and correlations through frequency analysis, reliability verification, one-way ANOVA, Chi-square, Factor Analysis, Correlation Analysis, and Simple Linear Regression Analysis of Korean martial arts athletes' questionnaires. , and the influence were explored and analyzed.

Results: As a result of analyzing followership, stress, empowerment, and organizational commitment of Korean martial arts athletes, the Judo team had a statistically significantly higher followership in all items than the Taekwondo team, and the Judo team had statistically higher stress and empowerment in certain items than the Taekwondo team. was found to be significantly higher. Martial arts events and training starting point were not related to the leader's followership, and martial arts events and university grades were found to be correlated. As a result of the factor analysis, 1-2 sub-factors of followership, stress, empowerment, and organizational commitment were derived. As a result of the correlation analysis, leader followership was significantly correlated with organizational commitment and empowerment, and stress was significantly correlated with organizational commitment and empowerment. As a result of the simple linear regression analysis, it was found that the leader's followership affects organizational commitment and empowerment, and stress has a partial effect on organizational commitment.

Conclusion: Compared to the Taekwondo team, the Korean Judo team showed higher levels of followership in all categories, and in some items, stress and empowerment were also higher, which can be explained by differences in martial arts training methods or leadership styles. Martial arts training starting point were not related to the leader's followership, but were found to be related to the university grade. From these results, it can be seen that martial arts and university grades should be considered when forming a team. In the martial arts training team, the leader's followership has a significant effect on organizational commitment and empowerment, and it can be said that stress is also related to organizational commitment. Therefore, the leader must properly adjust the followership style and consider stress management and organizational commitment.

Keywords: Korean Martial Arts Athlete, Leader's Followership, Stress, Empowerment, Organizational Commitment

1. Introduction

1.1. Need for the study

Korean judo and taekwondo are traditional martial arts that have achieved excellent results in various international competitions. Many athletes have won prizes in these events at the Olympic Games, World Championships, Asian Games, etc., introducing Korea's martial arts skills to the world[1][2][3].

Korean judo athletes have won many medals in international competitions, demonstrating their skills and ability to stand out on the international stage. In particular, the Korean National Judo Team has excelled at the Olympic and World Championships, demonstrating the country's judo prowess on the international stage[4][5][6].

Taekwondo is also a martial art that originated in Korea and is characterized by the use of fast kicks and various techniques[7]. Taekwondo was adopted as an official sport in the Olympic Games and now many athletes participate internationally, and Korean Taekwondo athletes have won many medals[8][9][10]. In particular, the Korean national Taekwondo team has consistently achieved excellent results in the World Championships and Asian Games, proving the excellence of Korean Taekwondo[11][12].

The excellence of Korean judo and taekwondo is based not only on the efforts and training of domestic athletes, but also on the traditional Korean martial art culture and philosophical values[13]. Korea is conducting a lot of research and investment to develop and advance these martial arts events, and through this, it maintains its competitiveness on the international stage[14][15][16]. Therefore, the present study aimed to explore the characteristics of Korean martial arts(judo and taekwondo) practice through a survey of university students who are competing in Korean martial arts competitions.

1.2. Pilot study

Prior studies on Korean university students' martial arts training have been conducted from various themes and perspectives. Some representative prior research topics are as follows:

First, a study on the motives and effects of martial arts training by university students, which investigated why university students practice martial arts and how martial arts training affects university students, and grasped the importance and value of martial arts training through understanding motivation and effects[17].

Second, it is a study on martial arts training and psychological characteristics of university students. The relationship between university students' personality, self-efficacy, stress coping ability, and martial arts training was analyzed, and the relationship between university students' psychological characteristics and martial arts training was identified. This contributed to finding out the effect of martial arts on students' psychological health[18].

Third, it is a study on university martial arts clubs and university students' social adaptability. This study investigates whether martial arts club activities in university's are related to university students' social adaptability and whether university students can develop friendship, leadership, and cooperative spirit through club activities[19].

Fourth, as a study on university students' martial arts training and physical health, this study investigated the effects of university students' martial arts training on their physical health. We seek ways to improve the physical health of university students by confirming the relationship between athletic ability, physical strength, flexibility, and muscle strength, and martial arts training[20].

Fifth, a study on the continuity and introduction policy of martial arts training by university students, which investigates which factors are important for university students to maintain martial arts training in the long term. In addition, research is conducted on the development of policies and programs for the introduction of martial arts training in universities[21][22].

In addition to this, a number of other studies have addressed various factors such as effective teaching methods, gender differences, and age differences in martial arts training[23][24][25]. These prior studies have been used to enhance university students' understanding of martial arts training and to develop martial arts education and programs. However, as in this study, not

many studies have been conducted to publicize the characteristics of Korean martial arts athletes to martial arts practitioners around the world by publishing the results of a survey on Korean martial arts athletes in English.

2. Research Methods

2.1. Study population and sampling methods

The population of this study was university students practicing martial arts at a university in Gyeongbuk, Korea. As for the sampling method, 150 people were surveyed by convenience sampling and the survey was conducted by the self-administration method. Among the collected 150 questionnaires, 136 questionnaires were used as a valid sample, excluding data with insincere responses or partial omissions in the survey contents.

Table 1. General characteristics of research subjects.

	Division	N(%)	Total
Gender	Man	100(73.5)	136
	Woman	36(26.5)	
Grade	First year of university	39(28.7)	136
	Second year of university	62(45.6)	
	Third year of university	33(24.3)	
	Fourth year of university	28(20.6)	
Major martial arts training	Judo	52(38.2)	136
	Taekwondo	77(56.6)	
	Etc.	7(5.1)	
Martial arts training start point	Infant school	12(8.8)	136
	Elementary school	56(41.2)	
	Middle school	40(29.4)	
	High school	28(20.6)	

2.2. Research question

The data processing of this study was performed with the SPSS 23.0 Program, and statistical verification was conducted as follows according to the purpose of research hypothesis and data analysis.

First, frequency analysis was conducted to identify general characteristics using the SPSS/PC+23.0 program.

Second, Cronbach's α coefficient was calculated to verify the reliability of the questionnaire.

Third, One Way ANOVA was conducted to explore the differences between martial arts training events and leader's followership, stress, empowerment, and organizational commitment.

Fourth, Chi-Square was conducted to explore the relationship between martial arts events, training point, and martial arts events and university grades.

Fifth, factor analysis was conducted on the leader's followership, stress, empowerment, and organizational commitment of martial arts practitioners.

Sixth, a correlation analysis was conducted to explore the relative influence among martial arts practitioners' leader's followership, stress, organizational commitment, and empowerment.

Seventh, Simple Linear Regression Analysis was conducted to explore the influence among martial arts practitioners' leader's followership, stress, organizational commitment, and empowerment.

2.3. Survey tools

2.3.1. Questionnaire contents

A questionnaire was used as a survey tool to achieve the purpose of this study, and the details are as follows.

Table 2. Leader's followership.

Question		Cronbach's α
1	A leader's guidance helps me achieve my goals.	.928
2	Leaders try to solve problems on their own rather than relying on others to solve them.	
3	Leaders actively and honestly acknowledge their strengths and weaknesses.	
4	Leaders understand the school's needs or goals and work hard to meet them.	
5	We believe that a leader's personal goals are well aligned with our team's goals.	
6	Leaders provide ideas and skills for the organization, as well as very dedicated guidance.	
7	Leaders energize our team with their enthusiasm for guidance.	
8	Leaders find out and lead by example even if it is not their job.	
9	Leaders do and contribute a lot even when they are not given the role of responsibility.	

Table 3. Stress.

Question		Cronbach's α
1	Our team's training time is too much.	.631
2	I get conflicting demands from two or three people about my training.	
3	I am in charge of a job that needs to be done differently depending on the situation.	
4	I have a clearly established mission and goal for training.	
5	I am clearly aware of my role.	
6	I know what my responsibilities are for my role.	
7	I know what my responsibilities are for my role.	
8	I know what my responsibilities are for my role.	

Table 4. Empowerment.

Question		Cronbach's α
1	I can exert a significant influence on the achievement of our team's goals.	.855
2	I can influence what happens on my team.	
3	I am confident that my team will successfully achieve its goals.	
4	I can successfully achieve even difficult training.	
5	I can control a lot of what happens on my team.	
6	I have the ability to decide for myself how to practice martial arts.	
7	I have a great deal of independence in conducting my training.	
8	The goals of my training are determined by myself.	

Table 5. Organizational commitment.

Question		Cronbach's α
1	I feel a strong sense of belonging to the team I am currently training for.	.747
2	I think the current team is worth putting all your heart and soul into.	
3	I am looking forward to a more positive life in the team now.	
4	I like to talk about my team with people outside the team.	
5	I think of my team's problems as my own and try to solve them.	
6	Even if I move to another team, I don't think it will be very different from the level of satisfaction with the current team.	
7	I feel like part of our team.	
8	I never thought about quitting our team.	

2.3.2. Validity and reliability of questionnaires

In this study, an appropriate method was selected for each verification method to increase the content validity of the questionnaire and to verify the construct validity. The content validity was secured through consultation with experts in the related research field to adopt the questionnaire items suitable for the purpose of this study.

Reliability is the degree to which an individual's score appears consistently when the same test or an isotype is repeated. Reliability is related to stability and consistency in establishing a research method, and one of the most important factors is whether the manipulated definition or index measures the subject of measurement consistently and reliably. Therefore, in this study, the reliability was verified based on the results of the questionnaire and the reliability was analyzed using Cronbach's α coefficient.

3. Results

3.1. Differences in martial arts training events

Table 6. Leader's followership.

Question	Event	N	M	SD	F	Sig	Post hot
Q1	Judo	52	4.5385	.57604	12.674	.000	A>B
	Taekwondo	77	3.8961	.80434			
	Other martial arts	7	4.4286	.78680			
Q2	Judo	52	4.3077	.82933	4.391	.014	A>B
	Taekwondo	77	3.8831	.77755			
	Other martial arts	7	4.0000	.81650			
Q3	Judo	52	4.3077	.82933	4.742	.010	A>B
	Taekwondo	77	3.8571	.80646			
	Other martial arts	7	4.1429	.89974			
Q4	Judo	52	4.4808	.77940	6.086	.003	A>B
	Taekwondo	77	3.9870	.78629			
	Other martial arts	7	4.1429	.89974			
Q5	Judo	52	4.2692	.74401	4.954	.008	A>B

	Taekwondo	77	3.8442	.81216			
	Other martial arts	7	4.2857	.75593			
Q6	Judo	52	4.5962	.56913	11.154	.000	A>B
	Taekwondo	77	3.9610	.84979			
	Other martial arts	7	4.2857	.75593			
Q7	Judo	52	4.4231	.75006	3.806	.025	A>B
	Taekwondo	77	4.0390	.80200			
	Other martial arts	7	4.2857	.75593			
Q8	Judo	52	4.3654	.86385	4.813	.010	A>B
	Taekwondo	77	3.9221	.75683			
	Other martial arts	7	4.1429	.69007			
Q9	Judo	52	4.4038	.82271	5.513	.005	A>B
	Taekwondo	77	3.9091	.84576			
	Other martial arts	7	4.1429	.69007			

Note: A: Judo, B: Taekwondo, C: Other martial arts.

Table 7. Stress.

Question	Event	N	M	SD	F	Sig	Post hot
Q1	Judo	52	2.8077	1.17220	1.396	.251	
	Taekwondo	77	3.0000	.84293			
	Other martial arts	7	2.4286	1.13389			
Q2	Judo	52	3.0962	1.03393	.322	.726	
	Taekwondo	77	2.9740	.74293			
	Other martial arts	7	3.0000	.00000			
Q3	Judo	52	3.1346	.92945	.098	.907	
	Taekwondo	77	3.0779	.91430			
	Other martial arts	7	3.0000	1.00000			
Q4	Judo	52	3.9231	.76302	5.657	.004	A>B
	Taekwondo	77	3.4545	.77026			
	Other martial arts	7	3.5714	.97590			
Q5	Judo	52	4.0385	.65564	4.144	.018	A>B
	Taekwondo	77	3.6883	.74798			
	Other martial arts	7	3.5714	.78680			
Q6	Judo	52	4.1346	.65765	5.228	.007	A>B
	Taekwondo	77	3.7403	.69590			
	Other martial arts	7	3.7143	.95119			
Q7	Judo	52	2.9038	1.15910	.849	.430	
	Taekwondo	77	3.1039	.88235			
	Other martial arts	7	3.2857	.95119			
Q8	Judo	52	2.4231	1.10872	.507	.604	
	Taekwondo	77	2.5325	1.04610			
	Other martial arts	7	2.1429	1.06904			

Table 8. Empowerment.

Question	Event	N	M	SD	F	Sig	Post hot
Q1	Judo	52	3.8846	.80814	3.873	.023	A>B
	Taekwondo	77	3.4935	.77159			
	Other martial arts	7	3.7143	.75593			
Q2	Judo	52	3.7885	.77552	.884	.416	
	Taekwondo	77	3.6234	.77865			
	Other martial arts	7	3.8571	.37796			
Q3	Judo	52	3.9231	.78830	1.419	.246	
	Taekwondo	77	3.6883	.78237			
	Other martial arts	7	3.7143	.75593			
Q4	Judo	52	3.9808	.85154	1.933	.149	
	Taekwondo	77	3.7013	.87457			
	Other martial arts	7	3.5714	.53452			
Q5	Judo	52	3.5192	1.03829	.198	.821	
	Taekwondo	77	3.4675	.88235			
	Other martial arts	7	3.2857	.95119			
Q6	Judo	52	4.1923	.84107	4.655	.011	A>B
	Taekwondo	77	3.7792	.89771			
	Other martial arts	7	3.4286	.78680			
Q7	Judo	52	3.6346	1.02954	.171	.843	
	Taekwondo	77	3.5584	.81907			
	Other martial arts	7	3.7143	.95119			
Q8	Judo	52	4.2692	.79497	3.718	.027	
	Taekwondo	77	3.9221	.85480			
	Other martial arts	7	3.5714	1.13389			

Note: A: Judo, B: Taekwondo, C: Other martial arts.

Table 9. Organizational commitment.

Question	Event	N	M	SD	F	Sig	Post hot
Q1	Judo	52	3.8846	.80814	3.873	.023	A>B
	Taekwondo	77	3.4935	.77159			
	Other martial arts	7	3.7143	.75593			
Q2	Judo	52	3.7885	.77552	.884	.416	
	Taekwondo	77	3.6234	.77865			
	Other martial arts	7	3.8571	.37796			
Q3	Judo	52	3.9231	.78830	1.419	.246	
	Taekwondo	77	3.6883	.78237			
	Other martial arts	7	3.7143	.75593			
Q4	Judo	52	3.9808	.85154	1.933	.149	

	Taekwondo	77	3.7013	.87457			
	Other martial arts	7	3.5714	.53452			
Q5	Judo	52	3.5192	1.03829	.198	.821	
	Taekwondo	77	3.4675	.88235			
	Other martial arts	7	3.2857	.95119			
Q6	Judo	52	4.1923	.84107	4.655	.011	A>B
	Taekwondo	77	3.7792	.89771			
	Other martial arts	7	3.4286	.78680			
Q7	Judo	52	3.6346	1.02954	.171	.843	
	Taekwondo	77	3.5584	.81907			
	Other martial arts	7	3.7143	.95119			
Q8	Judo	52	4.2692	.79497	3.718	.027	
	Taekwondo	77	3.9221	.85480			
	Other martial arts	7	3.5714	1.13389			

Note: A: Judo, B: Taekwondo, C: Other martial arts.

As a result of the leader's followership item according to the training event of the university's martial arts team, which is training martial arts at a university in the Gyeongbuk area of Korea, the judo team showed a statistically significantly higher score than the taekwondo team in all items. Stress was found to be statistically significantly higher in the Judo team than in the Taekwondo team in Q4, Q5, and Q6.

In addition, empowerment was found to be statistically significantly higher in the judo team than in the taekwondo team in Q1 and Q6, and organizational commitment was found to be statistically significantly higher in the judo team than in the taekwondo team in Q1 and Q6.

3.2. Relationship between martial arts events and training start point and martial arts events and university grades

Pearson's chi square value(χ^2) and approximate significance probability(p-value) were presented through cross-tabulation to find out the correlation between the martial arts events, the start of training, and the difference in university grade.

Table 10. Correlation between martial arts events and the start of training.

Division	Frequency(%)			Total
	Judo	Taekwondo	Other martial arts	
Infant school	5 (41.7)	6 (50.0)	1 (8.3)	12 (100.0)
Elementary school	16 (28.6)	37 (66.1)	3 (5.4)	56 (100.0)
Middle school	17 (42.5)	21 (52.5)	2 (5.0)	40 (100.0)
High school	14 (50.0)	13 (46.4)	1 (3.6)	28 (100.0)
$\chi^2(p)$	4.597(0.596)			

Note: $p < 0.05$, $p^{**} < 0.01$, $p^{***} < 0.001$.

As a result of cross-tabulation to explore martial arts events and training start points, $\chi^2=4.597$, $p=0.596$. According to the $p^*<0.05$ criterion, which is statistically insignificant, it can be said that there is no correlation between the martial arts event and the start time of martial arts training.

Table 11. Exploring the relationship between martial arts events and university grades.

Division	Frequency(%)			Total
	Judo	Taekwondo	Etc.	
First year of university	22 (56.4)	17 (43.6)	0 (00.0)	39 (100.0)
Second year of university	12 (19.4)	44 (71.0)	6 (9.7)	62 (100.0)
Third year of university	17 (51.5)	15 (45.5)	1 (3.0)	33 (100.0)
Fourth year of university	1 (50.0)	1 (50.0)	0 (00.0)	2 (100.0)
$\chi^2(p)$	19.780(0.003)**			

Note: $p^*<0.05$, $p^{**}<0.01$, $p^{***}<0.001$.

As a result of cross-tabulation to explore the relationship between martial arts events and university grades, $\chi^2=19.780$, $p=0.003$. Statistically significant at the $p^{**}<0.01$ criterion, it can be said that there is a correlation between martial arts events and grades.

3.3. Factor analysis

3.3.1. Leader's followership

An exploratory factor analysis(EFA) was conducted to determine the construct validity of nine leader followership scale items. Latent factors were extracted, and finally, the sample adequacy(MSA) of 8 questions, excluding the Q2. question, was 0.924, indicating that this data is suitable for factor analysis. In addition, as a result of Bartlett's sphericity test, $\chi^2=707.070$, $p=0.000$, with a significance level of 0.05, the correlation between the 'leader's followership' scale variables was recognized, and overall factor analysis was possible. Accordingly, one sub-factor was extracted, and it was named 'Passion and Commitment' as a factor of the 'Leader's Followership' scale.

Table 12. Leader's followership sphericity test.

KMO's method of sampling agreement(MSA) test	0.924	
Bartlett's sphericity test	Approx χ^2	707.070
	Degrees of freedom(df)	28
	p	.000***

Note: $p^*<0.05$, $p^{**}<0.01$, $p^{***}<0.001$.

Table 13. The structure of a leader's followership.

Item	Commonality	Factor	
Leader's followership Q7.	.733	.856	
Leader's followership Q6.	.717	.847	
Leader's followership Q3.	.705	.840	
Leader's followership Q5.	.658	.811	
Leader's followership Q8.	.628	.793	
Leader's followership Q9.	.623	.790	
Leader's followership Q4.	.623	.789	
Leader's followership Q1.	.589	.767	
Factor name		Passion and commitment	
Eigenvalue		5.276	
Dispersion ratio		65.955	
Cumulative variance ratio		65.955	

Note: Extraction method: CFA(common factor analysis).

3.3.2. Stress

Latent factors were extracted by conducting exploratory factor analysis(EFA) to determine the construct validity of the 8 items on the stress scale. Finally, the sample adequacy(MSA) of 6 questions excluding Q1 and Q2 was 0.624, indicating that this data is suitable for factor analysis. In addition, as a result of Bartlett's sphericity test, $\chi^2=229.622$, $p=0.000$, the correlation between the 'stress' scale variables was recognized based on the significance level of 0.05, and it can be said that overall factor analysis is possible. Accordingly, two sub-factors were extracted, and they were named 'goal and mission' and 'role and responsibility' as factors of the 'stress' scale.

Table 14. Stress sphericity test.

KMO's method of sampling agreement(MSA) test	0.624	
Bartlett's sphericity test	Approx χ^2	229.622
	Degrees of freedom(df)	15
	<i>p</i>	.000***

Note: * $p<.05$, ** $p<.01$, *** $p<.001$.

Table 15. Structure of stress.

Item	Commonality	Factor	
Stress Q5.	.768	.812	-.330
Stress Q6.	.673	.785	-.237
Stress Q4.	.598	.699	-.331

Stress Q3.	.575	.576	.493
Stress Q8.	.736	.198	.835
Stress Q7.	.698	.303	.779
Factor name		Goal and mission	Roles and responsibilities
Eigenvalue		2.227	1.820
Dispersion ratio		37.118	30.338
Cumulative variance ratio		37.118	67.456

Note: Extraction method: CFA(common factor analysis).

3.3.3. Empowerment

Latent factors were extracted by conducting exploratory factor analysis(EFA) to determine the construct validity of the eight empowerment scale items. The sample fit(MSA) of the item was 0.845, so it can be said that this data is suitable for factor analysis. In addition, as a result of Bartlett's sphericity test, $\chi^2=393.744$, $p=0.000$, with a significance level of 0.05, the correlation between the 'empowerment' scale variables was recognized, and overall factor analysis was possible. Accordingly, one sub-factor was extracted and named as 'self-efficacy', a factor of the 'empowerment' scale.

Table 16. Empowerment sphericity test.

KMO's method of sampling agreement(MSA) test	0.845	
Bartlett's sphericity test	Approx χ^2	393.744
	Degrees of freedom(df)	28
	p	.000***

Note: * $p<.05$, ** $p<.01$, *** $p<.001$.

Table 17. Structure of empowerment.

Item	Commonality	Factor
Empowerment Q8.	.532	.730
Empowerment Q1.	.545	.738
Empowerment Q7.	.497	.705
Empowerment Q2.	.511	.715
Empowerment Q3.	.474	.688
Empowerment Q5.	.487	.689
Empowerment Q6.	.567	.753
Empowerment Q4.	.386	.622
Factor name		Self-efficacy
Eigenvalue		4.001
Dispersion ratio		50.017
Cumulative variance ratio		50.017

Note: Extraction method: CFA(common factor analysis).

3.3.4. Organizational commitment

Latent factors were extracted by conducting exploratory factor analysis(EFA) to determine the validity of the constructs of the eight questions on the Organizational Commitment scale. Finally, the sample adequacy(MSA) of 6 questions excluding Q6 and Q8 was 0.814, indicating that this data is suitable for factor analysis. In addition, as a result of Bartlett's sphericity test, $\chi^2=338.178$, $p=0.000$, with a significance level of 0.05, the correlation between the 'organizational commitment' scale variables was recognized, and overall factor analysis was possible. Accordingly, one sub-factor was extracted and named as 'positive sense of belonging', a factor of the 'organizational commitment' scale.

Table 18. Organizational commitment sphericity test.

KMO's method of sampling agreement(MSA) test	0.814	
Bartlett's sphericity test	Approx χ^2	338.178
	Degrees of freedom(df)	15
	p	.000***

Note: * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Table 19. Structure of organizational commitment.

Item	Commonality	Factor
Organizational commitment Q1.	.579	.761
Organizational commitment Q2.	.758	.871
Organizational commitment Q3.	.619	.787
Organizational commitment Q4.	.522	.722
Organizational commitment Q5.	.457	.676
Organizational commitment Q7.	.468	.684
Factor name		Positive sense of belonging
Eigenvalue		3.402
Dispersion ratio		56.704
Cumulative variance ratio		56.704

Note: Extraction Method: CFA(common factor analysis).

3.4. Correlation

Table 20. Correlation analysis.

	Leader's followership	Stress	Organizational commitment	Empowerment
Leader's followership	1			
Stress	0.117	1		
Organizational commitment	0.429***	0.263*	1	
Empowerment	0.499***	0.437***	0.409***	1

Note: * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

In order to understand the relative influence among the leader's followership, stress, organizational commitment, and empowerment, Pearson's correlation analysis was conducted to find out the correlation between the four variables.

As a result, a statistically significant correlation was confirmed between leader's followership and organizational commitment, $r=0.429$, $p=0.000$, and empowerment, $r=0.499$, $p=0.000$, and stress was confirmed with organizational commitment, $r=0.263$, $p=0.020$. , $r = 0.437$, $p = 0.000$, and a statistically significant correlation with empowerment was confirmed. Organizational commitment was found to have a statistically significant correlation with empowerment, $r=0.409$, $p=0.000$.

3.5. Regression analysis

3.5.1. The effect of leader's followership on organizational commitment and empowerment

Table 21. The effect of leader's followership on organizational commitment.

Variable	Unstandardized coefficient		Standardization coefficient	t(p)	F(p)	R ²
	B	SE	β			
(A constant)	2.257	0.270		8.352***	30.177***	0.184
Leader's followership (independent variable)	0.356	0.065	0.429	5.493***		

Note: * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

A simple linear regression analysis was conducted to find out whether the leader's followership has an effect on organizational commitment. As a result of the analysis, $F=30.177$ ($p<0.001$) indicates that this regression model is suitable. As $\beta=0.429$, it was found to have an effect of 42.9%, and as $R^2=0.184$, it showed 18.4% explanatory power.

Table 22. The effect of leader's followership on empowerment.

Variable	Unstandardized coefficient		Standardization coefficient	t(p)	F(p)	R ²
	B	SE	β			
(A constant)	1.841	0.289		6.364***	44.370***	0.249
Leader's followership (independent variable)	0.462	0.069	0.499	6.661***		

Note: * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

A simple linear regression analysis was conducted to find out whether the leader's followership has an effect on empowerment. As a result of the analysis, $F=44.370$ ($p<0.001$) indicates that this regression model is suitable. As $\beta=0.499$, it was found to have an effect of 49.9%, and as $R^2=0.249$, it showed 24.9% explanatory power.

3.5.2. Effects of stress on organizational commitment and empowerment

Table 23. Effects of stress on organizational commitment.

Variable	Unstandardized coefficient		Standardization coefficient	t(p)	F(p)	R ²
	B	SE	β			
(A constant)	2.751	0.311		8.839***		
Stress (independent variable)	0.301	0.095	0.263	3.158*	9.972*	0.069

Note: *p<.05, **p<.01, ***p<.001.

A simple linear regression analysis was conducted to find out whether stress had an effect on organizational commitment. As a result of the analysis, $F=9.972(p<.05)$ indicates that this regression model is suitable. As $\beta=0.263$, it was found to have an effect of 26.3%, and as $R^2=0.069$, it showed 6.9% explanatory power.

Table 24. The effects of stress on empowerment.

Variable	Unstandardized coefficient		Standardization coefficient	t(p)	F(p)	R ²
	B	SE	β			
(A constant)	1.945	0.324		6.004***		
Stress (independent variable)	0.557	0.099	0.437	5.618***	31.588***	0.191

Note: *p<.05, **p<.01, ***p<.001.

A simple linear regression analysis was conducted to find out whether the leader's follow-ership has an effect on empowerment. As a result of the analysis, $F=31.588(p<.001)$ indicates that this regression model is suitable. As $\beta=0.437$, it was found to have an effect of 43.7%, and as $R^2=0.191$, it showed 19.1% explanatory power.

3.5.3. The effect of organizational commitment on empowerment

Table 25. The effect of organizational commitment on empowerment.

Variable	Unstandardized coefficient		Standardization coefficient	t(p)	F(p)	R ²
	B	SE	β			
(A constant)	2.044	0.331		6.177***		
Organizational commitment (independent variable)	0.457	0.088	0.409	5.193***	26.971***	0.168

Note: *p<.05, **p<.01, ***p<.001.

A simple linear regression analysis was conducted to find out whether organizational commitment has an effect on empowerment. As a result of the analysis, $F=26.971(p<.001)$ indicates that this regression model is suitable. As $\beta=0.409$, it was found to have an effect of 40.9%, and as $R^2=0.168$, it showed 16.8% explanatory power.

4. Conclusion

First, as a result of the leader's followership item according to the event of the judo team and taekwondo team training martial arts at a university in Korea, the judo team was found to be statistically significantly higher than the taekwondo team in all items. Stress was found to be statistically significantly higher in the Judo team than in the Taekwondo team in Q4, Q5, and Q6. In addition, empowerment was found to be statistically significantly higher in the judo team than in the taekwondo team in Q1 and Q6, and organizational commitment was found to be statistically significantly higher in the judo team than in the taekwondo team in Q1 and Q6.

Second, it can be said that there is no correlation between the martial arts event of Korean university martial arts athletes and the start of martial arts training, and there is a correlation between the martial arts event and university grade.

Third, as a result of factor analysis, leader followership was 'passion and dedication', stress was 'goal and mission' and 'role and responsibility', empowerment was 'self-efficacy', and organizational commitment was 'positive sense of belonging'. named.

Fourth, as a result of correlation analysis, 'leader's followership' was confirmed to have a statistically significant correlation with organizational commitment and empowerment, and 'stress' was confirmed to have a statistically significant correlation with organizational commitment and empowerment. And 'organizational commitment' was confirmed to have a statistically significant correlation with empowerment.

Fifth, as a result of simple linear regression analysis, the influence of 'leader's followership' on organizational commitment was found to have an effect of 42.9% with $\beta=0.429$, and an explanatory power of 18.4% with $R^2=0.184$. The influence of 'leader's followership' on empowerment was found to have an effect of 49.9% with $\beta=0.499$, and an explanatory power of 24.9% with $R^2=0.249$. The effect of 'stress' on organizational commitment was found to have an effect of 26.3% with $\beta=0.263$, and an explanatory power of 6.9% with $R^2=0.069$. The influence of 'leader's followership' on empowerment was found to have an effect of 43.7% with $\beta=0.437$, and an explanatory power of 19.1% with $R^2=0.191$. The effect of 'organizational commitment' on empowerment was found to have an effect of 40.9% with $\beta=0.409$, and an explanatory power of 16.8% with $R^2=0.168$.

5. Discussion and Suggestion

5.1. The difference between judo and taekwondo teams: leader's followership, stress, empowerment, organizational commitment

According to the study results, the judo team showed a statistically significantly higher level of 'leader's followership' in all items than the taekwondo team. In addition, 'stress' and 'empowerment' showed statistically significant high levels in some of the judo teams.

These results may be caused by differences in martial arts training methods or leadership styles between the judo and taekwondo teams. The high followership of the judo team seems to suggest that the team members send more trust and respect to the leader and form a positive relationship with the leader. In addition, the relatively high level of stress and empowerment

of the judo team in a specific item indicates that the judo team's experience and competence in that item are superior.

Through these results, it can be helpful to understand the martial arts training and leadership of judo and taekwondo teams and to develop athlete management plans. In addition, it can be used in the direction of improving team performance and members' satisfaction by considering these differences in follow-up research or martial arts team operation.

5.2. Martial arts events and training start time & martial arts events and university grade correlation

According to the study, the type of martial arts and the start of training were not related to the leader's followership. In other words, it was found that the followership of the leader of team members practicing martial arts was not significantly affected by the type of martial arts or the starting point of training. However, there was an association between martial arts and university grades. This may mean that the roles, responsibilities, and trustworthiness of the team change depending on the university year as the team members train in a specific martial art. As you gain more experience and knowledge in your senior year of university, your understanding of your role within a team and your relationship with a leader may increase.

These results suggest that when forming a martial arts team, the university year should be considered along with the martial arts of the team members. It is possible to further improve harmony and performance within the team by identifying the relationship between the team members who train in a specific martial arts event and the university grade, and reflecting this in the team operation or leadership policy.

5.3. Factors on leadership, stress, empowerment, and organizational commitment

According to the research results, it was confirmed that a leader's followership is related to 'passion and dedication'. This can mean that team members feel a strong passion and commitment to the leader and experience the leader's influence. In addition, it was confirmed that stress is related to 'goal and mission' and 'role and responsibility'. Team members may experience stress as they assume responsibility for achieving their goals and missions, following the direction and expectations of their leader. And it was confirmed that empowerment is related to 'self-efficacy'. Team members are empowered to do their jobs through their abilities and confidence, and to receive empowerment from their leaders. Lastly, it was confirmed that organizational commitment is related to 'positive sense of belonging'. Team members can increase organizational commitment by having a positive sense of belonging to the team and relationships with colleagues.

Through these results, in a martial arts team, the leader demonstrates passion and dedication to influence the team members. In addition, it can be seen that team members can increase organizational commitment by understanding goals and responsibilities, managing stress, fulfilling their roles with a sense of self-efficacy, and forming a positive sense of belonging. Therefore, team leaders and members must consider these factors and make efforts for effective team management and individual development.

5.4. The relationship among leader followership, stress, empowerment, and organizational commitment

According to the research results, a significant correlation was confirmed between a leader's followership and organizational commitment. This indicates that when a leader demonstrates strong followership, team members can feel a positive sense of belonging and commitment to the organization and increase organizational commitment. Also, a significant correlation was confirmed between stress and organizational commitment. When stress is high, team members tend to have a high level of commitment to the organization. This can indicate team members'

commitment to the organization and their willingness to fulfill their roles even under stress. In addition, a significant correlation was identified between leader followership and empowerment. When a leader provides appropriate empowerment to team members through followership, team members' self-efficacy is enhanced and they gain confidence in performing their duties.

Through these results, it can be seen that the leader's followership has a significant effect on organizational commitment and empowerment. In addition, stress was also found to be related to organizational commitment and empowerment. Therefore, the team leader should increase team members' commitment to the organization and self-efficacy through an appropriate followership style, and pay attention to stress management. This can have a positive impact on team performance and the personal growth of its members.

5.5. Leader's influence on followership, stress, empowerment, and organizational commitment, explanatory power

According to the research results, the leader's followership has a significant effect on organizational commitment and empowerment. When a leader has followership, team members feel a positive sense of belonging and commitment to the organization and increase organizational commitment. In addition, it was found that the leader's followership had a positive effect on team members' self-efficacy, or empowerment.

In addition, stress has been shown to have some effect on organizational commitment. The higher the stress level, the more committed team members tend to be to the organization. This can indicate the willingness of team members to fulfill their roles and responsibilities within the organization, even under stress.

Therefore, the results of this study confirm that the leader's followership has a positive effect on organizational commitment and empowerment, and indicates that stress can affect organizational commitment to some extent. This fact suggests that team leaders should make efforts to properly adjust followership style, manage team members' stress, and promote organizational commitment and self-efficacy. This can have a positive impact on team performance and the personal growth of its members.

Lastly, I hope that the spread and influence of Asian martial arts throughout the world will contribute to the peace of mankind and the lives of individuals.

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7. Appendix

7.1. Author's contribution

	Initial name	Contribution
Lead Author	SJ	-Set of concepts <input checked="" type="checkbox"/> -Design <input checked="" type="checkbox"/> -Getting results <input checked="" type="checkbox"/> -Analysis <input checked="" type="checkbox"/> -Make a significant contribution to collection <input checked="" type="checkbox"/>
Corresponding Author*	SJ	-Final approval of the paper <input checked="" type="checkbox"/> -Corresponding <input checked="" type="checkbox"/> -Play a decisive role in modification <input checked="" type="checkbox"/> -Significant contributions to concepts, designs, practices, analysis and interpretation of data <input checked="" type="checkbox"/>
Co-Author	BK BC	-Participants in Drafting and Revising Papers <input checked="" type="checkbox"/> -Someone who can explain all aspects of the paper <input checked="" type="checkbox"/>

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The Effects of Taekwondo Breaking Athletes' Judgment Recognition on the Game Stress

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Abstract

Purpose: In this study, it is intended to examine how the athlete's perception of referee's judgment affects game stress from the point of view of Taekwondo breaking athletes.

Method: The participants in this study were 421 students who were enrolled in a university that had a Taekwondo demonstration team. As for the data collected in the questionnaire in this study, SPSS 27.0 was used to conduct descriptive statistics and frequency analysis to confirm the demographic characteristics of the research participants, and exploratory factor analysis was conducted to verify the validity of the survey tool.

Results: The correlation coefficients between multiple factors were found to be statistically significant, but the correlation coefficients for some factors were not statistically significant. As a result of verifying the reliability of the factors, fairness .934, promptness .905, consistency .917, reliability .919, game stress .901, referee stress .870, which exceed .70, the criteria suggested by Nunnally and Bernstein(1994), and hence, the reliability of the extracted factor may be seen as suitable.

Conclusion: First, the correlation coefficient turned out to be statistically significant, but not statistically significant in the game stress factor. Second, as a result of regression analysis on the effect of university Taekwondo breaking athletes' referee decision recognition on game stress, it turned out that there was no statistically significant effect on fairness, promptness, consistency, and reliability. Third, as a result of regression analysis on the effect of referee judgment perception of university Taekwondo breaking athletes on referee stress, it turned out that there was no statistically significant effect on all factors of fairness, promptness, consistency, and reliability.

Keywords: Taekwondo, Breaking, Judgment, Recognition, Game Stress

1. Introduction

In order for sports to be established, it is essential that the element of game is accompanied. Game with one's self, others, and the environment encourages athletes to take on the challenges and may be a decisive factor in inducing interest and fun to the spectators[1]. It may be said that since sports is based on game, it is more important than anything else to make decisions that may be understood by the athletes, coaches, game officials, officials, and spectators participating in the game in order not to halve the smooth progress and interest of the game[2].

The fairness of referee judgment in the sports events is based on the accuracy and expressiveness of body movements such as Taekwondo breaking, while objectivity and trust in judgment are secured as the rankings are determined by individual or team records in games such as track and field, archery, and shooting. When there is not a big difference in skill in the event to be determined, the subjective judgment of the referee can have an absolute impact on the win or loss. The judgment of events that require such subjective judgment by the referee has a fundamental problem, and there is bound to be a dispute over the fairness of the referee's

judgment in a standard that is not clear to athletes, referees, officials involved in the operation of the game, and spectators[3]. The Korea Taekwondo Association(KTA) is also currently judging the game with a 5-judge system to improve these problems in the breaking game, and is trying to improve the fairness and objectivity of referee judgment by introducing a permanent referee system[1].

Recognition of the referee's judgment refers to how fair and legitimate an athlete's perception of the referee's judgment in a game[4]. Daeseong Park(2007) claimed that fairness of judgment, promptness of quick decision, consistency of the same standard, and reliability of confident attitude are important in the game as a referee[5]. Furthermore, the referees must abide by the game rules and make judgments that do not affect the performance of the athletes and make judgments that may be clearly accepted by all athletes, officials, and spectators[6]. However, if the referee's decision is not objective, fair, prompt, or consistent, the athletes' performance may deteriorate due to distrust of the referee's decision, confusion during the game, and psychological agitation.

The referee's many judgment experiences and the ability to make the flow of the game go smoothly will soon affect the athletes. Athletes gain confidence through the trusting relationship with the referee and the referee's ability to show improved performance, or, on the contrary, exhibits an unstable psychological state, resulting in a decrease in performance. Hence, the referees must make fair decisions that may be understood and accepted by the spectators, athletes, and coaches, and must not make athletes or coaches feel anxious with objective judgment. Distrust in the referee is directly related to game stress, which will be a decisive factor in deteriorating game performance.

The athletes participating in the games are exposed to various types of stress. Game stress is a bigger concept than anxiety, and it is the cognitive, emotional, and physical tension that athletes feel sensitively due to the complexity of performance. It is said that athletes feel different stresses in practice and game situations, and it may also be said that stress factors are largely influenced by environmental and human factors[7][8]. It was reported that when the referee's judgment was perceived negatively, the performance decreased[9], and the stress of the game decreased and the performance improved in a positive psychological state of the athletes who perceived the referee's judgment fairly[3][4]. In the sports games, judgments made by referees with professionalism and objectivity may be biased or misjudgment can occur, and errors in judgments like these may be deeply traumatic for athletes[10]. Gathering which, it is determined that the perception of referee judgment plays an important role in game stress, and the athlete's performance in the game situation may be determined to be the result of complex interactions between game operation and win-loss result factors.

Examining the previous studies on performance and referee judgment[11][12]. The ability to manage the game according to the athlete's perception of the referee's judgment and psychological factors such as stress and anxiety about the match result Although there have been studies such as those on the effect of stress on athletic performance, student athletes attending university the studies on the perceived referee decision recognition and studies on game stress and game performance targeting psychologically confused and anxious amateur student athletes are yet inadequate.

In this study, it is intended to examine how the athlete's perception of referee's judgment affects game stress from the point of view of Taekwondo breaking athletes. The studies on referee decision recognition for athletes are conducted on the majority of athletes, but the studies conducted centering on Taekwondo breaking athletes are still inadequate. Hence, this study aims to analyze the relationship between referee decision recognition of Taekwondo breaking athletes and how it affects the game stress, and provide it as basic data for improving performance to sports field athletes or instructors.

2. Research Method

2.1. Research subjects

The participants in this study were 421 students who were enrolled in a university that had a Taekwondo demonstration team. The characteristics of the study participants are as provided in <Table 1>.

Table 1. Study participants' general characteristics.

Classification	Classification	Frequency	Percentage(%)
Gender	Male	329	78.1
	Female	92	21.9
Grade year	Freshman	106	25.2
	Sophomore	150	35.6
	Junior	105	24.9
	Senior	60	14.3
Demonstration career	1 year to less than 3 years	123	29.2
	3 years to less than 5 years	104	24.7
	5 years to less than 7 years	89	21.1
	7 years to less than 9 years	54	12.8
	9 years to less than 11 years	31	7.4
	11 years or longer	20	4.8
Demonstration game Whether participated	Yes	317	75.3
	None	104	24.7
Demonstration game Award experience	Yes	106	25.2
	None	315	74.8
Total		421	100.0

2.2. Measurement tools

2.2.1. Referee's judgment recognition scale

As a sub-factor of judgment decision recognition, it was classified into 4 sub-factors: fairness(4 questions), promptness(4 questions), consistency(4 questions), and reliability(4 questions), and it consisted of a total of 16 questions. The referee decision recognition questionnaire consisted of a 5-level Likert scale, which were "not at all(1), not so(2), average(3), yes(4), and very much so(5)." The results of the exploratory factor analysis of referee decision recognition are as provided in <Table 2>.

Table 2. Referee judgment recognition's exploratory factor analytical results.

	1	2	3	4
Fairness1	.813	.246	.262	.235
Fairness4	.810	.241	.251	.218
Fairness2	.799	.247	.192	.280
Fairness3	.786	.300	.224	.311
Reliability2	.379	.755	.278	.177
Reliability4	.247	.753	.366	.333
Reliability1	.275	.751	.284	.301
Reliability3	.265	.691	.301	.325
Promptness3	.284	.260	.785	.169
Promptness1	.255	.281	.773	.250
Promptness2	.196	.290	.712	.371
Promptness4	.256	.399	.641	.201
Consistency1	.200	.275	.358	.742
Consistency3	.308	.261	.397	.698
Consistency4	.305	.317	.330	.652
Consistency2	.298	.368	.229	.644
Eigenvalue	7.391	2.395	1.351	1.191
Dispersion	63.070	6.959	4.718	3.836
Accumulation	63.070	70.029	74.747	78.582

Note: KMO=.957, Bartlett's unit matrix($\chi^2=6324.087$, df=120, sig=.000).

2.2.2. Game stress scale

The game stress questionnaire was evaluated on a 5-level Likert scale, which was consisted of “not at all(1), not so(2), average(3), so(4), and very much so(5).” The results of the exploratory factor analysis of game stress are as provided in <Table 3>.

Table 3. Results of exploratory factor analysis of game stress.

Factor	1	2
Game stress1	.856	.229
Game stress3	.834	.176
Game stress4	.814	.295
Game stress2	.796	.195
Game stress5	.721	.408
Referee stress3	.272	.848
Referee stress1	.255	.832
Referee stress5	.239	.804
Referee stress4	.199	.756
Referee stress2	.197	.642
Eigenvalue	5.398	1.539
Dispersion	53.976	15.386
Accumulation	53.976	69.362

Note: KMO=.894, Bartlett's unit matrix($\chi^2=2568.151$, df=45, sig=.000).

2.3. Data analysis

As for the data collected in the questionnaire in this study, SPSS 27.0 was used to conduct descriptive statistics and frequency analysis to confirm the demographic characteristics of the research participants, and exploratory factor analysis was conducted to verify the validity of the survey tool. Reliability was verified through Cronbach's α analysis. The correlation analysis was conducted to identify the relationship between variables, and multiple regression analysis was conducted to analyze the effect of university breaking athletes' perception of referee decisions on game stress. All statistical significance levels were set at .05.

3. Results

3.1. Correlation analysis and reliability analysis

<Table 4> illustrates the results of verifying the correlation coefficient of the factors constituting the judge's decision recognition and game stress of university Taekwondo breaking athletes. The correlation coefficients between multiple factors were found to be statistically significant, but the correlation coefficients for some factors were not statistically significant. As a result of verifying the reliability of the factors, fairness .934, promptness .905, consistency .917, reliability .919, game stress .901, referee stress .870, which exceed .70, the criteria suggested by Nunnally and Bernstein(1994), and hence, the reliability of the extracted factor may be seen as suitable.

Table 4. Results of correlation and reliability analysis.

Classification	1	2	3	4	5	6	α
1. Fairness	1						.934
2. Promptness	.654**	1					.905
3. Consistency	.748**	.786**	1				.917
4. Reliability	.693**	.764**	.778**	1			.919
5. Game stress	-.056	-.084	-.097*	-.037	1		.901
6. Referee stress	-.142**	-.172**	-.190**	-.169**	.565**	1	.870

Note: ** $p < .01$, * $p < .05$.

3.2. Effects of university taekwondo breaking athletes' perception of referee judgment on the game stress

As a result of conducting multiple regression analysis on the effect of referee's decision recognition on game stress of university Taekwondo breaking athletes, it turned out that none of the components of referee's decision perception had a statistically significant effect on game stress.

Table 5. Effects of referee's judgment recognition on game stress.

Factor	B	SE	β	<i>t</i>	<i>p</i>	<i>df</i>
Constant	3.206	.210		15.297	.000	4
Fairness	.017	.074	.017	.224	.823	
Promptness	-.077	.091	-.073	-.854	.394	
Consistency	-.153	.100	-.146	-1.526	.128	
Reliability	.125	.090	.121	1.396	.163	

$F=1.571$, $R=.122$, $R^2=.015$, Adjusted $R^2=.005$

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

3.3. Effects of university taekwondo breaking athletes' judgment perception on the referee stress

Table 6. Effects of referee's judgement recognition on referee stress.

Factor	B	SE	β	t	p	df
Constant	3.496	.204		17.130	.000	4
Fairness	.016	.072	.017	.221	.825	
Promptness	-.048	.088	-.046	-.546	.586	
Consistency	-.138	.097	-.134	-1.419	.157	
Reliability	-.042	.087	-.041	-.485	.628	
F=4.111, R=.195, R ² =.038, Adjusted R ² =.029						

Note: * $p<.05$, ** $p<.01$, *** $p<.001$.

As a result of conducting multiple regression analysis on the effect of referee decision recognition on referee stress in university Taekwondo breaking athletes, it turned out that none of the components of referee decision perception had a statistically significant effect on game stress.

4. Discussion

Based on the results of this study, it is intended to discuss the following.

As a result of analyzing the effect of the university Taekwondo breaking athletes' recognition of referee judgment on the game stress, it turned out that there was no effect on fairness, promptness, consistency, and reliability.

In a study conducted by Taeho Choi and Kwangho Lee(2012) on the university soccer athletes, there was an intention not to relate the referee's decision to their performance. Rather, it was reported that the referee's propensity was different for each game, so it was recognized that it was important to respond appropriately[13].

Furthermore, it is believed that older athletes, which may be interpreted as having a lot of athletic experience, focus more on the parts that the athletes themselves can control rather than focusing on environmental variables that are difficult to control themselves, such as referee decisions in game situations, than younger athletes. It was reported that the higher grade athletes are more capable of minimizing unnecessary energy consumption in game situations[14]. Such results support the results of this study conducted on university breaking athletes. In the case of individual technical breaking in which university breaking athletes participate, not only the individual's performance but also the breathing of the assistant is important, so rather than focusing on the referee's decision, we focus more on the various environments necessary for the performance, so it is determined that the perception of the referee's decision does not affect the stress of the game.

Hyeonjeong Lee and Miseong Hong(2013) claimed that athletes with higher self-management had a lower negative perception of referee's judgement fairness, and a study by Gookhyeon Jung(2003) also found that in the case of the athletes who strive for self-management and maintain the best condition before the game, they reported that they were not significantly disturbed by the referee's decision due to his high confidence[15][16]. Furthermore, in a study by Daeseung Yang and Hyeonwoo Kang(2017), it was reported that athletes with high self-confidence were able to cope well without being shaken in negative situations caused by referee decisions experienced in game situations[4]. This may be determined to be related to the results

of this study because most of the university breaking athletes, unlike younger athletes, manage themselves and make efforts to improve their performance.

As a result of analyzing the effect of referee judgment perception of university Taekwondo breaking athletes on referee stress, it turned out that there was no effect on all factors of fairness, promptness, consistency, and reliability.

Gymnastics judges showed the highest frequency of stress due to lack of understanding of event rules and difficulty[17]. Furthermore, it was reported that institutional changes at the association level and changes in the perception of referee members are needed to resolve distrust in referee decisions and allow athletes to focus on the game[14].

In 2022, breaking events were newly established as a tournament approved by the Korea Taekwondo Association, and currently, the Korea Taekwondo Association appoints a standing referee for breaking to operate the tournament in order to form a specialized referee. In the case of breaking referees, most of them are from the Taekwondo demonstration team and have a high level of understanding of Taekwondo breaking techniques. It is determined that this has a positive effect on institutional changes according to the referee problem reported in previous studies, and it is determined that it has a positive effect on the confidence and judgment of the judges of the athletes.

Among the breaking events of the university division, technical breaking consists of aerial leap breaking, vertical axis rotation breaking, horizontal axis rotation breaking, and comprehensive breaking. technology is fixed. Due to this game method, most athletes can infer the evaluation score for the difficulty and proficiency of individual breaking techniques to some extent. Furthermore, the points for deductions such as failure to break, fall, leaving the field, etc. are also applied, so it is determined that the athletes were not stressed about the referee's judgment in that they could guess their own score after making a mistake.

Lastly, in the case of the breaking event, unlike other detailed events in Taekwondo, such as sparring and Poomsae, it is not currently adopted as an official event in the Olympic games and world games, so there is a lack of motivation for participating in the game as an elite athlete and performance, so the referee's judgment is recognized, and hence, It is believed that there was no effect on the stress caused thereby.

5. Conclusion and Recommendations

This study was conducted with the purpose of examining and articulating the effect of referee decision recognition of university Taekwondo breaking athletes on game stress. To achieve the purpose of the study, a survey was conducted targeting university Taekwondo demonstration team members who participated in the nationwide breaking games. In order to analyze the relationship between referee decision perception and game stress factors, a questionnaire was conducted on the referee decision perception scale and game stress scale to collect data. The collected data was analyzed through frequency analysis, correlation analysis, and multiple regression analysis, and the conclusions drawn are as follows.

First, the correlation coefficient turned out to be statistically significant, but not statistically significant in the game stress factor.

Second, as a result of regression analysis on the effect of university Taekwondo breaking athletes' referee decision recognition on game stress, it turned out that there was no statistically significant effect on fairness, promptness, consistency, and reliability.

Third, as a result of regression analysis on the effect of referee judgment perception of university Taekwondo breaking athletes on referee stress, it turned out that there was no statistically significant effect on all factors of fairness, promptness, consistency, and reliability.

Based on this study, it was confirmed that university athletes participating in Taekwondo breaking games, which are recently increasing, have the referee's judgement perceptions not affected by the game stress. A follow-up study will need a study targeting middle and high school breaking athletes who demonstrate the highest rate of participation in Taekwondo breaking games. It seems that there will be a clear difference between the middle and high school breaking athletes and the university breaking athletes.

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7. Appendix

7.1. Authors contribution

	Initial name	Contribution
Author	HS	<ul style="list-style-type: none">-Set of concepts <input checked="" type="checkbox"/>-Design <input checked="" type="checkbox"/>-Getting results <input checked="" type="checkbox"/>-Analysis <input checked="" type="checkbox"/>-Make a significant contribution to collection <input checked="" type="checkbox"/>-Final approval of the paper <input checked="" type="checkbox"/>-Corresponding <input checked="" type="checkbox"/>-Play a decisive role in modification <input checked="" type="checkbox"/>-Significant contributions to concepts, designs, practices, analysis and interpretation of data <input checked="" type="checkbox"/>-Participants in Drafting and Revising Papers <input checked="" type="checkbox"/>-Someone who can explain all aspects of the paper <input checked="" type="checkbox"/>

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The Relationship between Martial Arts Training and Meditation

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Abstract

Purpose: The purpose of this study is to compare and analyze the relationship between body and mind through the process of meditation, which is receiving increasing attention in modern times. This study will contribute to the educational utilization of martial arts in meditation by comparing and analyzing the relationship between body and mind, identifying the body and mind as inseparable, and the training of the body as a technical means to improve the mind and personality. This will contribute to the educational utilization of martial arts in meditation.

Method: As one of the data collection methods to study social and cultural phenomena, the method of collecting necessary information through existing literature data was selected. This was approached as a qualitative research method that collects data and interprets the meaning of the phenomenon through the intuitive insight of the researcher.

Results: There are two types of meditation: static meditation and dynamic meditation. Static meditation is a seated, stationary practice that involves sitting in a certain posture and focusing your consciousness on a single thought, clearing your mind of distractions, and calming your mind. Dynamic meditation is a form of meditation that involves repetition of certain movements, such as walking or practicing martial arts, in which you imagine an area as a sanctuary and walk a certain distance every day without stopping. As you continue to perform physical exercises, the mind becomes increasingly unresponsive to external stimuli and focuses only on mental images. Repetitive physical exercises like this have the effect of meditation. In this way, practicing Taekwondo or the Chinese martial art of kung fu can have a meditative effect. The Taekwondo curriculum are consisted of 1) The trainees must perform repetitive movements through 360 hours of training 2) 1 Dan/Poom holders require 240 hours of training, 2 Dan/Poom holders require 480 hours, 3 Dan/Poom holders require 720 hours, 4 Dan/Poom holders require 960 hours, 5 Dan holders require 1200 hours, 6 Dan holders require 1440 hours, 7 Dan holders require 1680 hours, and 8 Dan holders require 2060 hours of training in nine years. These required hours are divided into units for repetitive training such as Poomsae, competition, defeat, character, self-defense, taekwondo physical fitness, taekwondo gymnastics, taekwondo demonstration, and core exercises.

Conclusion: The study found that repetitive physical exercises make the mind increasingly unresponsive to external stimuli and focus on mental images. This has the effect of meditation, so martial arts training and meditation are closely related.

Keywords: Meditation, Martial Arts, Taekwondo, Buddhism, Kung Fu

1. Introduction

Meditation has become a very popular practice in modern times. Especially when they are stressed or psychologically disturbed and find it difficult to process their emotions. Early meditation has the power to control the mind and body through concentration and to make us examine our conscience. Meditation clears the soul and leads to a healthier life.

It is said that the way to bring order to the soul is to first realize the shame of existence and bow the head. When you bow your head and humble yourself, that is when you become a human and become yourself.

Can the spirit that can be achieved through meditation be achieved through martial arts training? Meditation can be divided into static meditation and dynamic meditation. Static meditation is a method of meditation practiced in a seated, stationary position, in which you sit in a certain posture and focus your consciousness on a single thought, eliminate distractions, and calm your mind[1]. In Buddhism, reading scriptures or chanting the Buddha's name over and over again is sometimes used to remove distractions. It is a discipline in the sense that it is done over and over again.

Dynamic meditation is a method of meditation that involves the repetition of certain movements, such as walking or practicing martial arts, in which you imagine an area as a sanctuary and walk a certain distance every day without stopping. As you continue to perform physical exercises, the mind becomes increasingly unresponsive to external stimuli and focuses only on mental images. This repetitive physical exercise has the effect of meditation[2].

In particular, the secret of Eastern martial arts lies in the unity of the mind and Qi(energy). Here, we can say that the mind refers to consciousness. However, Qi is a very ambiguous(un-clear) concept. In martial arts, the mind refers to the Danjeon, where Qi is collected. Training these Danjeon is the basis of martial arts.

In Taoism, the traditional practices are breathing and meditation. Meditation, in particular, is the practice of contemplating the internal world that is mind, not the body[3].

Meditation training also starts with breathing. The action of "Qi" in the body and mind, which is latent in the unconscious realm, realizes the creative and brilliant potential of the mind and body, and leads to a high level of character.

Like meditation, martial arts training involves practicing the techniques and movements of a martial art. Korean Taekwondo, Chinese Tai chi, and Shaolin martial arts emphasize breathing and use the softness and resilience of the body to master techniques of attack and defense. In the process of training, the creative and calming potential of the unconscious mind is realized, leading to a high level of character.

Many studies have been conducted in connection with area of martial arts. The training and curriculum[4][5][6][7][8][9], the technics of martial arts[10][11][12][13][14] and the competitions and events[15][16][17][18][19] etc., have been carried out. In addition, the studies on effects of meditation have been conducted[20][21][22][23], researches regarding martial art and meditation is insufficient.

Therefore, this study will contribute to establishing the relationship between martial arts training and meditation, which is a subject of high interest to modern people, and using it for educational purposes, so that the effects of meditation can be experienced in martial arts training to enjoy a strong spirit and a healthy life.

2. The Actuality of Meditation

In English, meditation is often described interchangeably as meditation and contemplation. Meditation and Medicine have the same root word, 'Medi'. 'Medi' is derived from the Latin word 'Mederi', which means 'to cure'. This etymological connection suggests that meditation is about curing difficult and painful conditions through the mind.

However, contemplation is often used in the Buddhist sense of reflecting on an object or its reasoning with true wisdom. Or, in Catholicism, it means "to discover and behold God, the source of all things, in a place where one can look inwardly at them. It can be interpreted as putting aside greed and anger, observing the world with a calm mind, and sharing love and

compassion[24]. More specifically, meditation is a word that focuses more on our inner consciousness. However, focusing solely on one's inner self is not enough to heal the inner self.

Therefore, meditation is a means to go beyond the calmness of one's own mind and to realize that life is inherently peaceful and beautiful in our neighbors and ourselves.

The word meditation, when translated from its original Chinese meaning, means "to think with one's eyes closed in silence". To be more precise, by closing your eyes, you open the eyes of your mind instead, and you think deeply about your own inner world, not the external world that constantly stimulates and tests you[25].

Today, meditation is used as a tool for modern people to live a prosperous and happy life, and its effectiveness in relieving symptoms of anxiety, depression, and stress has been verified through numerous studies and evidence[26]. Therefore, numerous meditation methods have recently been developed and spread. The multidimensional properties of modern meditation are as follows.

Table 1. The multidimensional properties of modern meditation[26].

	Physical purpose	Mental purpose	Additional practice	Relaxation response	The duration
Mindfulness meditation	Sitting, lying, walking	Awareness without distracting thought	Adding various meditation elements	Existing	Various
Transcendental meditation	Not applicable	Not applicable	Adding various meditation elements	Existing	More than twice a day
Sahaja yoga	Posture of sitting	Awareness without distracting thought		Existing	Twice a day
Relaxation response	Posture of sitting	Awareness without distracting thought, various mental activities	Not applicable	Existing	Once or twice a day

Meditation is also the first step in a spiritual practice and a process of understanding life. Meditation can be divided into static and dynamic meditation. Static meditation has its roots in religion, and some people think of it as a religious ritual. A Buddhist practice, zazen is a seated, stationary meditation method that involves sitting in a certain posture and focusing your consciousness on a single thought, thus bringing your thoughts together, clearing your mind of distractions, and calming your mind[27].

Dynamic meditation, unlike static meditation, is not practiced in a fixed, static position. At Shaolin Temple, one of the most famous temples in China, monks practiced martial arts as part of their training. These repetitive physical movements allow you to forget about your breathing, forget about the objects you see, forget about yourself, and immerse your mind in the physical actions you are performing. This kind of meditation allows you to develop latent positive qualities[28].

When you calm your mind through meditation and make spiritual progress, your level of consciousness increases and you become immune to many of the problems that trouble you.

3. The Practice of Martial Arts

Martial arts originated in the East, and martial arts training in particular has a long history. This have played an important role in establishing human behavior and ethical and social value

systems[6]. In addition, martial arts have had a great influence on the formation of proper mental culture and education in Eastern society[6]. Martial arts is an inner value of ethical meaning through training and In the course of practice, the relationship between body and mind is changed to one of integration rather than separation[6].

The first martial arts were at the level of survival skills. However, with the formation of social culture in the development and change of the times, it has developed into a sport where competition and rules are emphasized[29].

In Japan, martial arts have a very long tradition in Japanese society, and this has developed with its own unique character[30]. Martial arts such as judo, kendo, and archery have been practiced for a long time. But nowadays, they also practice martial arts such as karate and aikido. The practice of these martial arts has given birth to the unique spirit of bushido, which symbolizes Japan. The martial arts have inspired the Japanese people through their moral atmosphere, reflecting Japanese morality[31].

In China, the monks of the Shaolin Temple, the home of Zen Buddhism and the birthplace of Shaolin martial arts, practiced martial arts as a means of cultivation. Through disciplined martial arts movements, they achieved the state of trance. These Shaolin martial arts are intangible cultural assets of China[32]. The reason that Chinese martial arts existed and developed in Buddhist temples was possible through the fusion of Confucianism and Buddhism.

Chinese martial arts were developed based on Chinese culture and were heavily influenced by Chinese philosophy. After the 1950s, succession, dissemination, and research of martial arts were further developed, and martial arts experts were organized and techniques and regulations were unified[29].

Nowadays, Wushu, Chinese martial art, became the modern sport and official Asian games event. Through the Asian Games in 1990, Wushu changed considerably from a martial art that valued practical combat to a goal that pursues health as a sport and goodwill competition[29]. Comparing the nature of Wushu as a martial art and sport and Changes in Wushu club's training goals are as follows[29].

Table 2. Comparing the nature of woshu as a martial art and sport.

	Woshu as a martial art	Woshu as a sport
1	Pursuit of confucianism, buddhism, and taoism through training	Pursuit of health and leisure
2	Practical skills for survival	Physical expression through technical performance

Table 3. The changes in woshu club's training goals.

The training goals	1980s	1990s	2000s
1	Spirit of martial art	Movie of martial arts	Health and sports for all
2	Mind and body training	Justice	Emotional stability
3	Practical skills	Mind and body training	Improving sportsmanship
4		Distinction between martial arts and sports	Diversification of sports

The purpose of martial arts technics has changed. In particular, with the development of training places and safety equipment, the safety of trainees and technics that represent the characteristics of martial arts have been demanded.

Table 4. The changes in woshu technics' goals[29].

	1980s	1990s	2000s
Goals	Practical uses for self defense	Movie of martial arts	Sport technics

Taekwondo is Korean martial art. The World Taekwondo Headquarters, Kukkiwon, promotes taekwondo as an educational program. In particular, it sends taekwondo instructors to 53 countries around the world. The Korean Taekwondo Association has also established a standard curriculum for taekwondo and distributed it to the clubs to ensure that taekwondo is systematically taught[33].

The number of Taekwondo practitioners who are judged and promoted for Dan test is as follows by continent.

Table 5. The candidate for dan promotion test on september 2022 according to the continents[34].

Continents	Total	Asia	Oceania	Europe	Africa	America
Candidate	13,992	10,390	200	698	354	2,350

In addition, taekwondo practitioners are required to observe a certain period of time after holding the Dan and the number of hours of training, the requirements as shown in the table.

Table 6. Obligatory training period and age limit for promotion[34].

Poom/dan to be promoted	Obligatory training period(years)	Age limit for promotion		Remarks
		1 st dan/up	1 st poom/up	
1 st poom			Below age 15	* All applicants for promotion are subject to the requirements of obligatory training period and age limit. * Those early beginners of taekwondo, who have obtained poom grades, will be given privileges of curtailed age limit up to the 5 th dan promotion.
2 nd poom	1 year		Below age 15	
3 rd poom	2 years		Below age 15	
4 th poom	3 years		Below age 18	
1 st dan		Age 15 and over		
2 nd dan	1 year	Age 16 and over	Age 15 and over	
3 rd dan	2 years	Age 18 and over	Age 15 and over	
4 th dan	3 years	Age 21 and over	Age 18 and over	
5 th dan	4 years	Age 25 and over	Age 22 and over	
6 th dan	5 years	Age 30 and over	Age 30 and over	
7 th dan	6 years	Age 36 and over	Age 36 and over	
8 th dan	8 years	Age 44 and over	Age 44 and over	
9 th dan	9 years	Age 53 and over	Age 53 and over	
10 th dan		Age 60 and over	Age 60 and over	

1) Poom may be granted to a successful trainee who is less than 15 years old, and Dan to a successful trainee who is 15 or more than 15 years old. A Poom grade holder becoming 15 years old equal to a Dan grade holder (If one passes the age of 15, he may ask for the change of certificate from Poom to Dan to the Kukkiwon) [34].

2) If Poom holder who has passed the age of 15 applies for a promotion to a next higher Dan grade, the required period of training shall be calculated from the first day when he obtained the present grade. However, when a third-Poom holder wants to be promoted to be promoted to the 4th Dan, his age shall be over 18 [34].

Table 7. The requirements for dan/poom promotion test [34].

	Age term for dan promotion	Age term for dan promotion
Dan 6th level	5 years (dan 5th level : dan promotion winner before 2017. 03. 31.)	30 years old (born before 1992. 03. 31.)
Dan 7th level	6 years (dan 6th level : dan promotion winner before 2016. 03. 31.)	36 years old (born before 1986. 03. 31.)
Dan 8th level	8 years (dan 7th level : dan promotion winner before 2014. 03. 31.)	44 years old (born before 1978. 03. 31.)
Dan 9th level	9 years (dan 8th level : dan promotion winner before 2013. 03. 31.)	53 years old (born before 1969. 03. 31.)

4. The Connection between Martial Arts and Meditation

Can you get the benefits of meditation through martial arts? There are two types of meditation: static meditation and dynamic meditation. In this case, martial arts practice is categorized as dynamic meditation. Static meditation is practiced in a seated, stationary position, such as in Buddhist meditation, whereas dynamic meditation is not practiced in a fixed, static position. In the Shaolin Temple, monks practice martial arts for the purpose of training, and through repeated physical movements, they forget about the feeling of breathing, forget about visible objects and themselves, and immerse themselves in thoughts of only the physical movements they are performing at the moment. In addition, walking is a dynamic activity of the body that provides exercise, but also brings spiritual progress by calming the mind through meditation. It also calms the mind by focusing the consciousness on a single thought, bringing thoughts together, dispelling distractions, and calming the mind [35].

Taekwondo, a traditional Korean martial art, also cultivates this spirit. As a martial art, taekwondo is the art of subduing an opponent by force [36]. However, Taekwondo's five spirits are: patience, which is the mental ability to overcome physical and psychological pain; courage, which is the ability to overcome overwhelming opponents and challenges that one encounters in the course of training without fear; and courtesy, which is the manner of speech and body language that shows respect for one's fellow human beings, beginning with courtesy and ending with courtesy, courtesy as a totality of behavior; fourth, justice of the heart for all as the right way to live in accordance with the truth, the fair way to organize and maintain society, and the way to live in relationship with people; and fifth, the spirit of service, which emphasizes the use of physical strength developed by practicing the martial art of Taekwondo for the benefit of the nation, society, and others [37].

In this way, martial arts practice is a dynamic form of meditation, a form of meditation alongside static meditation.

5. Conclusion

Through this study, the following conclusions were obtained.

Meditation can be divided into static and dynamic meditation. Static meditation is a meditation method performed in a sitting position, in which the consciousness is concentrated on a single thought in a sitting position, and the mind is calmed down.

In Buddhism, there are cases where miscellaneous thoughts are removed by reading the scriptures or memorizing the names of Buddha repeatedly. As such, static meditation has a history of religion, so some people think of it as a religious ritual, and in the sense of continuing to repeat, image training has the same meaning as training.

Dynamic meditation is a meditation method that is performed while walking or repeatedly performing certain movements, such as martial arts training, and is considered a sanctuary, walking without resting at a certain distance every day. In other words, if you continue physical exercise, the mind gradually stops responding to external stimuli and focuses only on the image of the mind. Repeated physical exercise in this way gains the effect of meditation. Martial arts training is classified by dynamic meditation. At Shaolin of Temple, monks practice martial arts for the purpose of performance, and repetitive body movements gain exercise effects, and through meditation, they find tranquility and bring spiritual progress.

Taekwondo training serves the five principles of discipline: first, patience to overcome physical and psychological pain, second, courage to overcome difficult opponents or tasks encountered during training, third, courtesy to the other person. Third, justice of the heart for all as the right way to live in accordance with the truth, the fair way to organize and maintain society, and the way to live in relationship with people. Fifth, Developing a spirit of service that benefits people widely with physical strength cultivated through training in the martial art of Taekwondo.

Accordingly, martial arts training is a dynamic meditation and is a method of meditation training along with static meditation, and it can be seen that martial arts training is related to meditation.

This study will contribute to the use of aesthetic effects obtained through martial arts training as meditation and training methods.

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7. Appendix

7.1. Author's contribution

Initial name		Contribution
Author	SC	-Set of concepts <input checked="" type="checkbox"/>
		-Design <input checked="" type="checkbox"/>
		-Getting results <input checked="" type="checkbox"/>
		-Analysis <input checked="" type="checkbox"/>
		-Make a significant contribution to collection <input checked="" type="checkbox"/>
		-Final approval of the paper <input checked="" type="checkbox"/>
		-Corresponding <input checked="" type="checkbox"/>
		-Play a decisive role in modification <input checked="" type="checkbox"/>
		-Significant contributions to concepts, designs, practices, analysis and interpretation of data <input checked="" type="checkbox"/>
		-Participants in Drafting and Revising Papers <input checked="" type="checkbox"/>
		-Someone who can explain all aspects of the paper <input checked="" type="checkbox"/>

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Krav Maga Program to Combat Indiscriminate Violence

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Abstract

Purpose: This study delves into the significance of Krav Maga training for enhancing self-defense abilities against indiscriminate violence, a societal issue impacting personal safety, and emphasizes its practicality in combination with the Israeli military combat system as a fundamental approach to applying martial arts for self-defense. The study seeks to reevaluate Krav Maga's pivotal role in bolstering self-defense against indiscriminate violence and to identify prospects for its future development.

Method: The research method and data collection method to achieve the purpose of this study used electronic literature platform search. Validity as data was verified through triangulation.

Results: Krav Maga is a practical and effective self-defense system that originated in Israel, initially developed for military use but later adapted for civilian self-defense. Martial arts for security, military martial arts, and police martial arts programs are presented as a vitalization plan.

Conclusion: The revitalization plan for the Krav Maga program against indiscriminate violence can emphasize the importance of a tailored curriculum, certified instructors, scenario-based training, ethical considerations, periodic assessments and interdisciplinary collaborations, and empowers participants self-defense, bodyguards, soldiers and police. Training can be instilled with the aim of ensuring the ability to manage problems effectively in a variety of situations by equipping them with practical self-defense skills, legal awareness and enhanced situational preparedness.

Keywords: Indiscriminate Violence, Krav Maga, Security Martial Arts, Military Martial Arts, Police Martial Arts

1. Introduction

Although life has become rich and convenient with the development of science and materials, mental problems and social pathologies are increasing due to materialism and confusion of personal and social values. Young, brutal, collective, and professional[1]. It is not theft or violence, but heinous crimes such as robbery and murder are on the rise, violating the safety and dignity of society.

In particular, it refers to the act of inflicting physical, mental, or verbal violence on others for no specific reason or purpose. Indiscriminate violence can occur for a variety of reasons, such as mental problems of the perpetrator, social pressure, and failure to control emotions. Indiscriminate violence not only causes serious wounds and pain to the victim, but can also create anxiety and fear throughout society[2][3].

According to the Korean Academic Information[KISS] database, a total of 1,121 academic papers related to indiscriminate violence from 2000 to 2023 were 97 in 2019, and while talking

about school violence, family factors, gender differences, Factors such as stress and peer relationships have been emphasized[4] and factors that influence intimate partner violence(IPV) in adults have been investigated and found that witnessing parental violence in childhood and having a tolerant attitude towards IPV are associated with a higher incidence of IPV. found to be high[5]. Violence victimization in adolescents has been shown to be associated with higher rates of mental health problems, including sadness, suicidal ideation, and suicide attempts[6], and explores the extent of childhood domestic violence experiences and their long-term effects on mental health[7]. Examining the relationship between community crime rates and quality of life, we found that higher violent crime rates were associated with lower residents' quality of life[8].

In recent years, indiscriminate violence in Europe is reviewed in the context of the EC Qualifications Directive and the European Convention on Human Rights[9]. State indiscriminate violence against civilians has been seen as counterproductive to governments[10]. Avoiding indiscriminate violence against civilians has been a pillar of US insurgency policy, making non-combatants more likely to foment rebellion[11] and analyzing the prevalence and role of violence in Europe from a socio-cultural perspective, contributing to the evolution of violence and human and state action. The impact being illuminated[12]. European criminal policy is merging with American criminal policy, with a growing tendency to embrace violence, war, and even torture as solutions to social and political problems[13].

Indiscriminate violence in the United States remains a significant problem, and although the homicide rate has declined over the years, there are still more than 16,000 homicides per year[14] and while the rate of aggravated assault has declined, non-fatal assault injuries that still require treatment in the emergency room each year It amounts to 1.6 million[15]. Intimate partner violence affects more than 12 million adults each year, and with more than 10 million children experiencing some form of abuse from their caregivers, exposure to violence increases their vulnerability to mental and physical health problems[16] and increases their risk of violence. Rates vary by age, location, gender, and race/ethnicity, with significant disparities[17]. Efforts to prevent violence often lack cooperation and awareness of effective strategies.

Therefore, among the methods to respond to indiscriminate violence, martial arts is a way to develop not only physical defense ability but also mental balance and confidence. However, the purpose of learning martial arts is to prevent or avoid violence, not to cause or abuse it. point. It provides a response to violence by emphasizing a form of life centered around the understanding that the fluidity of martial arts is inherent[18]. However, the evolving role of violence in promoting mixed martial arts(MMA) events suggests that violence may no longer be necessary to promote events[19]. Martial arts have also been found to have a moderate effect in reducing externalizing behaviors such as aggression and violence among adolescents who practice them[20]. Traditionally taught martial arts may also provide an effective alternative treatment program for violent adolescents emphasizing respect, self-control, and non-violence[21]. Overall, martial arts can be seen as a means of counteracting and reducing violence in terms of personal development and social impact.

Specifically, Krav Maga training in martial arts is based on the understanding that violence can happen suddenly and unexpectedly, and focuses on developing intense physical sensations to prepare the individual for relentless fighting action. This approach eliminates the need to understand the ideology or intent of an act of violence and instead emphasizes the ability to take immediate action. By training in Krav Maga, individuals can contribute to a safer society by developing the mindset and physical abilities needed to defend themselves and others in situations of violence[22].

This study aims to explore the method and importance of Krav Maga training to improve self-defense ability to prevent and respond to indiscriminate violence. Indiscriminate violence is rec-

ognized as a social problem and affects personal safety and quality of life. Therefore, it is necessary to have self-defense ability, so in this study, Krav Maga intends to present a key foundation for applying martial arts to self-defense. Krav Maga is an Israeli military combat system that has practical and effective self-defense techniques. This study aims to serve as an opportunity to re-recognize the role and importance of Krav Maga, which can improve self-defense ability to cope with indiscriminate violence, and to seek the ability and direction of development.

2. Method of Research

This study utilized electronic literature platforms such as KISS, RISS, DBPIA, E-article, KOREA SCHOLAR, Korean Database, KSDC DB, MOAZINE, and Korea Science in Korea, and Sci-hub, Research gate, Science on, Science gov, and Academia overseas. , SEMANTIC SCHOLAR, The Lens, ResearchGate, etc. were used, academic data on each field and topic were provided, and electronic literature search was conducted through literature review based on the collected data. wanted to achieve.

2.1. Literature selection process

In order to finally confirm the literature related to the purpose of this study, among the collected data, literatures with overlapping or similar topics and contents were excluded. Then, the titles and summaries of each literature were rechecked to select literatures highly related to this study. The literature selected in this way was verified for validity of the data through triangulation with a group of peer experts.

2.2. Data processing method

The selected literatures were systematically analyzed to find common content, and organized to discuss and explain the results separately. At this time, the researcher and a group of fellow experts tried to improve the reliability of the data by repeatedly reviewing and verifying the collected data and analyzed contents.

2.3. Integrity of data

In this study, all stages and procedures of the study were reviewed and discussed with a pre-formed group of peer experts to ensure that the researcher's bias did not affect the research process. In addition, I tried to increase the objectivity of the study through consultations with colleagues from various perspectives.

3. Problems with Responding to Indiscriminate Violence

As for the incidence of violent crime(violence), the overall violent crime rate has declined significantly over the past decade by 29.7%, and only decreased by 13.8% in 2021 compared to 2020[23]. However, the number of cases of sexual violence increased by 9.5% over 10 years and by 3.4% in 2021 compared to 2020[24], and the compensation response rate for school violence can be seen gradually rising to 1.7% in the first survey in 2022 [25].

South Korea's response to indiscriminate violence is insufficient in many areas, and domestic violence, a prevalent problem in Korea, is deeply rooted in Confucianism and cultural ideology[26]. The points show that more measures are needed, and the frequency of violence among adolescents is concerned because it is related to increased suicidal behavior and depressed mood[27]. Behavior is low, and structural problems within the police, prosecution, and judiciary, as well as non-help behavior and inaction[28].

The response in the United States has also been weak, and awareness and cooperation on

effective prevention strategies has been limited[29], which, despite some progress in reducing rates of interpersonal violence, remains a significant burden, affecting millions of US residents each year[30], violence prevention efforts have often ignored the interrelationships of various forms of violence and their impact on mental and physical health[31], The equation between crime and violence is incorrect, and treating violence only as a crime problem is not a resource. may be wasted and an opportunity to save a life may be missed[32].

Table 1. Prosecution service/trends in the number and cost of major criminal offenses by type(2011-2020).

(Unit: case, accrual, %)

Year	Property crime			Violent crime(heavy)			Violent crime(violence)		
	Occurrences	Accrual	Increase rate	Occurrences	Accrual	Increase rate	Occurrences	Accrual	Increase rate
2011	605,549	1,193.6	-	29,382	57.9	-	251,707	496.1	-
2012	633,602	1,243.6	4.2	28,906	56.7	-2.0	253,115	496.8	0.1
2013	667,214	1,304.6	9.3	33,787	66.1	14.1	237,553	464.5	-6.4
2014	617,119	1,202.3	0.7	34,126	66.5	14.8	233,655	455.2	-8.2
2015	622,126	1,207.3	1.2	35,139	68.2	17.7	248,707	482.7	-2.7
2016	573,445	1,109.3	-7.1	32,963	63.8	10.1	251,889	487.2	-1.8
2017	542,336	1,047.4	-12.2	36,030	69.6	20.2	238,789	461.2	-7.0
2018	576,937	1,113.2	-6.7	35,272	68.1	17.5	233,392	450.3	-9.2
2019	627,430	1,210.1	1.4	35,066	67.6	16.8	232,316	448.1	-9.7
2020	659,058	1,271.6	6.5	32,812	63.3	9.3	210,241	405.6	-18.2

There are complexities in responding to indiscriminate violence as it makes it more difficult for governments to remain neutral than to take sides using such tactics to quell riots[33] and conflict despite data, ignorance, cost and institutional constraints, and the illogical nature of the conflict. The pivotal role of indiscriminate violence in shaping dynamics[34] was further highlighted by the paradoxical effects and consequences of indiscriminate violence used by terrorist organizations such as al-Qaeda in Iraq during the civil war[35]. It requires consideration because as the conflict continues, actors may eventually turn to more selective violence. Indiscriminate violence violates human rights, undermines social justice and equality, discriminates against people with certain characteristics, violates their dignity and freedom, causes social division and conflict, undermines social solidarity and trust, reduces the health and quality of life of victims, and increases the economic burden of medical, legal, and rehabilitation costs.

4. Krav Maga Against Indiscriminate Violence

4.1. Educational value

Krav Maga has educational value as it is considered a martial art effective self-defense system and training practiced by thousands of people worldwide[36]. The evolution of Krav Maga has become intertwined with historical events and cultural history, making it part of Israel's intangible cultural heritage[37]. It has evolved from the concept of reaction[38]. Krav Maga is not simply a linear and monolithic phenomenon, but a complex discipline that encompasses many

aspects such as personal defense, body movement, and survival[39]. Thus, Krav Maga provides educational value by teaching individuals self-defense skills, promoting physical fitness, and preserving the intangible cultural heritage of Israel's Jewish population[40].

The educational value of Krav Maga is summarized as follows.

- Self-Defense Skills: Krav Maga teaches practical and effective self-defense skills that help individuals protect themselves in real-life situations. Learning how to defend yourself against common aggression can increase your self-confidence and your sense of personal safety.
- Physical fitness: Krav Maga training consists of a combination of cardiovascular exercise, strength training, and flexibility training, allowing practitioners to improve overall strength, stamina, coordination, and agility through regular training.
- Mental Training: Krav Maga training requires mental focus and discipline. As practitioners learn to remain calm under pressure and make snap decisions, the mental training can be applied to other areas of life as well, helping them make better choices in stressful situations.
- Situational Awareness: Krav Maga emphasizes situational awareness, teaching practitioners to pay attention to their surroundings and potential threats. Holistic situational awareness can help enhance personal safety and avoid dangerous situations.
- Confidence and Empowerment: By learning Krav Maga, you can increase your self-confidence by gaining the skills and knowledge to protect yourself and your loved ones. This increased self-confidence can positively impact many aspects of your life.
- Stress Relief: Physical activity such as Krav Maga can act as an effective stress reliever, allowing practitioners to relax and clear their mind, improving their mental health.
- Teamwork and camaraderie: Because many Krav Maga classes are taught in groups, they foster camaraderie and teamwork among participants, which can help build meaningful social friendships and supportive communities.
- Problem-Solving Skills: Krav Maga practice can increase problem-solving skills and quick decision-making skills, often involving scenarios that require practitioners to think for themselves and adapt to rapidly changing situations.
- Conflict Resolution: Krav Maga focuses on self-defense, but also helps in conflict avoidance and resolution, so practitioners are taught to use physical techniques as a last resort, emphasizing verbal communication and de-escalation where possible. there is.
- Lifestyle and mindset: Krav Maga encourages an active and vigilant mindset, allowing practitioners to pay more attention to personal safety and make healthier lifestyle choices to better prepare for potential challenges.

4.2. Technical value

The technical aspects of Krav Maga have significant value in self-defense and combat training, and the biomechanics of Krav Maga techniques such as kicks and punches have been studied to increase their effectiveness and efficiency[41]. Its focus on reflex defense, believed to be true reflexes mediated at the brainstem level, differentiates it from other combat disciplines[22], and Krav Maga's techniques are based on simple body movements that can be quickly learned and maintained[42]. It is an easy-to-learn and highly effective self-defense program, thanks to the system's basic skills and practical behavior[43]. Mastering the strike techniques of Krav Maga, such as punches and kicks, can improve speed and impact power[39]. Overall, the technical aspects of Krav Maga can provide individuals with practical and efficient skills for self-defense and combat situations.

Therefore, the summation of Krav Maga's technical value is as follows.

- Simple, Instinctive Skills: Krav Maga emphasizes skills that are simple, easy to learn, and based on natural instincts. Therefore, it is easily accessible to people of various ages and physical abilities.

-Realistic Scenarios: Krav Maga skills are developed based on real-life scenarios and common types of attacks, so that trainees are trained to deal with situations such as grabs, strangles, strikes, and armed threats, so they can learn relevant and practical skills.

- Aggressive Counterattack: Krav Maga teaches trainees to respond aggressively and decisively to threats, and aims to quickly neutralize the opponent by focusing on the attacker's vulnerable body parts, such as the eyes, groin, neck, and joints.

- Adaptability and Improvisation: Krav Maga orients the ability to adapt and improvise, so that practitioners learn to modify their skills according to the specific situation they are faced with, which is learned in dynamic and unpredictable situations.

- Defense Against Various attacks: Krav Maga prepares practitioners to defend themselves in various scenarios by performing various attacks such as strikes, kicks, grabs, bear hugs, headlocks, and weapons.

- Defensive and Offensive Skills: Krav Maga focuses primarily on self-defense, but also includes offensive skills to create opportunities for escape or counterattack, so the balance of defensive and offensive tactics improves the practitioner's overall effectiveness.

- Rapid Response and Transition: Krav Maga practice emphasizes fast and efficient movement, allowing the practitioner to seamlessly switch between defensive and offensive movements, which is essential for controlling fluid situations.

- Stress Training and Realism: Krav Maga integrates stress training to simulate real-life situations and allows practitioners to manage the psychological and physiological effects of adrenaline and stress during an attack, increasing the likelihood of successful application of the technique under pressure. can be high

- Ground Fighting Skills: Krav Maga includes ground fighting skills for situations where the practitioner may fall to the ground, such as street fights or assaults, to teach practitioners how to defend themselves and regain standing.

- Law Enforcement and Military Applications: Due to Krav Maga's technological effectiveness, the adoption of Krav Maga by law enforcement agencies and militaries around the world, with an emphasis on swift, decisive and effective action, Krav Maga may be in demand in these professions.

5. Differences Between Krav Maga and Other Martial Arts

Krav Maga is a close combat discipline that originated in the 19th century in response to life-threatening conflicts[39]. Self-defense is widely used worldwide as a self-defense and martial arts training[22], and one of the main characteristics that distinguishes Krav Maga from other combat disciplines is its reliance on reflexive defense, a natural and immediate defensive response[36]. It is believed that the motor control mechanisms underlying Krav Maga's reflex defenses are bona fide reflexes mediated at the brainstem level[44]. In terms of body composition and morphological symmetry, there are differences among martial arts practitioners[45]. Elite athletes in various martial arts such as judo, karate, wrestling, taekwondo, and kickboxing show differences in body composition variables such as fat-free mass, fat mass, bone mass, protein mass, and total body water. In addition, in a study comparing the functional status of martial artists, it can be found that there is a difference in motor ability and reaction time for each martial art discipline. So, in a nutshell, the differences between Krav Maga and other martial arts are:

- Skills and Training: Krav Maga emphasizes simple, straightforward techniques that are easy to learn and apply in stressful situations. Training scenarios often include realistic situations, multiple attackers, and weapon threats. Traditional martial arts(Taekwondo, Karate, Kung Fu) include spar-ring and striking techniques that emphasize precision and form, and emphasize

dynamic kicking. Ju-do, jiu-jitsu, and wrestling are centered on fighting, submission, and throwing on the ground.

- Sports versus self-defense: Krav Maga focuses primarily on self-defense, Krav Maga techniques are designed to quickly neutralize threats and move away from harm, the goal is personal safety, so there is no competitive aspect, traditional martial arts. Many martial arts include sparring and tournament rules. has a competitive aspect, is awarded points based on skill execution, and often focus-es on controlled engagement rather than neutralizing threats.

- Adaptability: Krav Maga teaches principles and concepts that can be applied in a variety of situations and environments, including armed attackers and ground scenarios. Traditional martial arts techniques are often designed for specific scenarios and may not be versatile when faced with unexpected situations.

- Philosophy and Culture: Krav Maga lacks the profound philosophical and cultural aspects found in traditional martial arts, and its focus is solely on practical self-defense. Traditional martial arts are often rooted in cultural heritage, and these arts teach values such as discipline, respect, and personal development along with physical skills.

- Weapon Defense: Krav Maga focuses on defending against a variety of weapon threats, including tactical knives, guns, sticks, and traditional martial arts may not be as central or extensive as Krav Maga, although some arts include weapon training.

In summary, both Krav Maga and traditional martial arts have their own merits and are particularly suited to individuals who want practical self-defense skills in real-world situations while meeting different goals, while traditional martial arts offer a broader experience that encompasses philosophy, cultural aspects, and different forms of physical training.

6. Krav Maga Countering Indiscriminate Violence

Krav Maga is a practical and effective self-defense system that originated in Israel, initially developed for military use but later adapted for civilian self-defense. Martial arts for security, military martial arts, and police martial arts programs are presented as a vitalization plan.

Figure 1. Self-defense when attacking with a knife using krav maga.



6.1. Krav maga self defense case study

Krav Maga is a self-defense and martial arts training that originated in response to life-threatening conflicts in the early 19th century and is now a military self-defense system developed for the Israel Defense Forces(IDF) and Israel Security Forces(Shabak, Mossad). As a result, there is a trend of compromising Taekwondo, Hapkido, Jiu-Jitsu, and Kali techniques in boxing, wrestling, aikido, judo, and karate[46] along with practical combat training. Krav Maga is known for its focus on real-life situations, maximal efficiency, and counterattacks of brutality, and is known as reflex defense, a natural and immediate defense response mediated at the brainstem level [22]. According to a study of novice female practitioners, It was found that one training session was

sufficient to learn and maintain Krav Maga strike techniques such as straight punches and defensive kicks[43], highlighting the importance of immediate defensive reactions while discussing the movement control mechanisms underlying reflexive defense in close combat. do. In addition, studies on Krav Maga's self-defense effectiveness have proven that striking skills can be acquired and maintained with just one training [4]. Overall, Krav Maga integrates risk management elements to better understand its application in various situations. It can be seen as an effective combat system for self-defense, such as providing skills that help individuals to secure their safety in street attacks[47].

6.2. Krav maga program as self-defense

Krav Maga is an Israeli field of real-world combat practiced and taught around the world, a combat system and crisis management technique that provides individuals with safety against street attacks with reflexive defense, a natural and instantaneous defensive response[47] that can be used by soldiers in real-world situations. It is an Israeli combat code designed to teach self-defense and enforced worldwide[38]. Krav Maga originated in the 19th century and evolved from traditional fighting methods and concepts of situational awareness and unconscious reactions[39], with an emphasis on instinctive movements and efficient counterattacks, making it known as an easy-to-learn and highly effective self-defense technique[42] and for beginners. Krav Maga is a comprehensive program that teaches basic skills, practical movements and fitness programs[22]. Therefore, the following is a summary of the Krav Maga program activation plan as a self-defense.

- Situational Awareness: Maintaining constant situational awareness and searching for individuals, objects, and escape routes can provide critical time to respond to potential threats.
- Use of Verbal De-escalation: You can prioritize verbal de-escalation by using a calm but firm tone before using physical techniques to defuse the situation and clearly communicate your intent to avoid conflict whenever possible.
- Start a Defensive Posture: If the situation worsens and you feel threatened, you can adopt a defensive posture that hinders the attacker's range and striking ability.
- Target Identification: Krav Maga can identify potential targets for effective strikes by evaluating the attacker's stance, preferentially targeting vulnerable body parts such as eyes, neck, groin and knees.
- Rapid and Aggressive Reactions: Krav Maga emphasizes fast and aggressive reactions, allowing you to use strikes, kicks, knee strikes, and other techniques to quickly neutralize an attacker and focus on areas of weakness to intensify the impact of your actions.
- During an Attack: you can exploit weaknesses or gaps in the attacker's defenses and use the surrounding environment to your advantage, seizing objects for improvised weapons or strategically placing them near obstacles that might hinder the attacker's mobility.
- Escape Routes: During self-defense, you can recognize escape routes and, if possible, distance yourself from threats so that safety is your top priority.
- Controlled Aggression: You can refrain from aggression when responding, and focus on your skills and situational awareness to actively defend while remaining calm so as not to be penalized.
- Continuous Movement: Strategically using lateral movement, angles, and footwork can increase defense and exploit the attacker's weaknesses.
- Practice and Training: Consistent Krav Maga practice with an experienced instructor can build muscle memory, confidence, and improve technique and response.—

In summary, the goal of activating Krav Maga as a self-defense technique can neutralize threats and ensure safety. However, safety should always be your top priority and will help you avoid or escape dangerous situations without physical conflict.

6.3. Krav maga program as a guard martial art

Krav Maga, used as a martial art as a guard martial art, is a discipline of self-defense and combat that originated in Israel in the early 19th century[39] and is practiced and taught worldwide, with an emphasis on reflexive defense and immediate defensive reactions[22]. Training in Maga is about learning instinctive movements and efficient counterattacks, and it is a program that anyone can easily learn and is very effective[37]. It is also used by the Israel Defense Forces(IDF) as an effective self-defense system[38], and has been battle-tested and proven successful, making it suitable for bodyguards who need to protect themselves and others in dangerous situations[42][48]. Therefore, the Krav Maga program as a guard martial art is summarized as follows.

- Efficiency and Simplicity: Krav Maga's streamlined and efficient technology allows bodyguards to react quickly in high-pressure situations, which can provide a notable advantage in scenarios that require quick decisions.
- Situational Awareness: By remaining vigilant and aware of their surroundings at all times, bodyguards can train individuals to identify potential threats early, giving them the time needed to initiate a response.
- Defense of Others: Important for bodyguards, the Krav Maga principles can go beyond self-defense and help protect clients and others from a variety of threats.
- Versatility of melee protection: Krav Maga can provide bodyguards with skills to maintain distance, control melee situations, and neutralize threats while keeping the person under protection safe.
- Stamina and Conditioning: Stamina and stress management are essential for bodyguards, and the rigorous conditioning of Krav Maga training can improve endurance, strength, and overall stamina.
- Tactical Training: Essential for strategic thinking and quick decision-making while protecting customers, Krav Maga's tactical training can cover scenarios such as crowd escort, protection and management.
- Protection against armed threats: Given the potential for encounters with armed attackers, Krav Maga's weapon defense and disarming techniques can increase the proficiency of bodyguards in neutralizing firearms and other weapon threats.
- Continuing Training: Just as bodyguards undergo continuous training to keep their security protocols up to date, Krav Maga training includes ongoing training so that bodyguards can maintain their skills and prepare for potential threats.

In summary, Krav Maga's practicality, adaptability, focus on efficiency, and emphasis on situational awareness make it an effective martial art for security guards, and by incorporating Krav Maga training into their skill set, security guards will improve their ability to protect their clients and respond effectively to dynamic and potentially dangerous situations.

6.4. Krav maga program as a military martial art

Used as a military martial art, Krav-Maga is a self-defense martial art known for its practical effectiveness against uncontrolled clashes with aggressors[49] and its approach focuses on effectively dealing with threats, and its application as a training method for soldiers. It is a property that extends the program[50]. Krav-Maga has gone beyond its identity as a mere martial art and has established itself as a practical and effective self-defense system firmly integrated into military training[40].

Krav Maga's origins, dating back to the early 19th century, are deeply rooted in responding to life-threatening conflict, resulting in Israeli hand-to-hand combat as a self-defense system and martial arts training[22]. It demonstrates an innate ability to trigger an immediate and natural defense response mediated through[36]. These effects have garnered worldwide popularity as

more and more people worldwide adopt Krav Maga to enhance their self-defense skills[25], and also from a military perspective, the Israel Defense Forces(IDF) use Krav Maga in real-world self-defense situations. It is positioned as a military martial art with profound practical impact, strategically used as a comprehensive tool for instructing soldiers[36].

Therefore, the Krav Maga program as a military martial art is summarized as follows.

- Evaluation and Curriculum Development: The first step should be to assess the soldier's specific self-defense needs and develop a specialized Krav Maga curriculum that includes practical skills in close combat, weapon retention, and disarming, depending on the type of threat and operating environment.
- Education Integration: This can be achieved by working with an experienced Krav Maga instructor who understands both martial arts and military mechanics, and should be incorporated into military training by integrating Krav Maga sessions into the overall training schedule so soldiers can practice regularly and reinforce self-defense skills.
- Simulation and Real Training: Simulating real combat scenarios in Krav Maga training allows soldiers to apply skills in stressful situations to improve their ability to react effectively and develop muscle memory for quick and precise reactions.
- Progressive Education Level: Soldiers are encouraged to follow a structured training process that begins with basic skills and progresses to more complex skills. This will give you a solid foundation and progressive exposure to dynamic scenarios.
- Mental and Physical Conditions: As a military martial art, Krav Maga emphasizes mental and physical control and can incorporate mental training techniques to enhance soldiers' situational awareness, decision-making, and composure under pressure for comprehensive self-defense.
- Continuous Evaluation and Improvement: We continuously evaluate the impact of Krav Maga training on the military, gather input from instructors and soldiers so we can pinpoint opportunities for improvement and adjust the curriculum based on real-world encounters and evolving threats to maintain skill relevance and efficacy. there is.
- Cross-Education and Interdisciplinary Cooperation: Cross-training and collaboration with other professional units and disciplines can help integrate Krav Maga with other military skills to increase team performance and develop well-rounded soldiers capable of meeting a variety of challenges, and this interdisciplinary approach can strengthen collaborative skills such as inclusiveness, empathy, listening, and providing feedback.

In summary, by effectively integrating Krav Maga, military organizations can empower soldiers with the skills needed to navigate the complexities of modern combat situations utilizing practical and efficient self-defense techniques.

6.5. Krav maga program as a police martial arts

Krav Maga is a self-defense martial art that can be reactivated as a police martial art. Studying the biomechanics of Krav Maga techniques such as kicks and fists can improve self-defense skills and keep up with existing threats[41]. Krav Maga's main feature, reflexive defense, is a true reflexive defense mediated at the brainstem level, which is an effective method for self-defense[7]. An important part[51], and by understanding the kinetic control mechanisms and temporal characteristics of reflexive defenses, Krav Maga training for police officers can be enhanced to include multiple combat responses to different threats[39]. In addition, analyzing the scientific production and historical background of Krav Maga can provide useful insights for enhancing the training and effectiveness of martial arts[37]. Therefore, to sum up the Krav Maga program as a police martial art, it is as follows.

- Need Analysis and Customization: By assessing the unique challenges faced by officers, including arrest scenarios, crowd management and potential weapon encounters, the Krav Maga curriculum is tailored to directly address the issues and equips officers with the appropriate

skills to effectively carry out their day-to-day responsibilities. can be equipped

- Collaborate With Experts: By working with knowledgeable Krav Maga instructors who are familiar with the intricacies of martial arts and law enforcement, their expertise can help apply Krav Maga techniques for police officers by incorporating legal awareness, de-escalation strategies, and guidelines for the use of force.

- Scenario-Based Training: Scenario-based exercises that simulate real situations can develop the ability to respond effectively by practicing situations such as resisting a suspect, holding weapons, and handling emotional interactions in scenarios.

- Focus on De-escalation: The core of Krav Maga for police will fit into a holistic policing approach by incorporating reduction methods, integrating communication and conflict resolution prior to the use of force, educating to de-escalate tense situations.

- Legal and Ethical Considerations: Incorporating legal and ethical considerations into the Krav Maga program will enable police to prevent misuse or excessive use of force by ensuring that they are accountable, limit the use of force and align with departmental policies.

- Continuing Education and Retraining Courses: Consistent sessions and refresher courses will ensure that Krav Maga remains an ongoing component of education, strengthening skills and adapting to new threats, maintaining officers' confidence and proficiency in the application of skills.

- Defensive Tactics Integration: Krav Maga training for police, which includes both offensive techniques and defensive tactics, will enable police officers to proficiently defend against various attacks and protect themselves and others with minimal damage.

- Health and Fitness: Emphasizing the health and fitness of police officers as essential aspects of Krav Maga training will enhance their readiness to respond effectively in stressful situations and will enable officers to maintain physical conditioning to complement their Krav Maga proficiency.

In summary, law enforcement agencies will be able to successfully incorporate Krav Maga into police martial arts, giving officers the skills they need to navigate complex and often unpredictable policing situations.

7. Conclusion

The purpose of this study is to provide a basis for expanding and revitalizing the Krav Maga program training and management to actively respond to indiscriminate violence, and to explore strategic ways to revitalize it as a personal, bodyguard, military, and police martial art. The research methodology is a literature review and reflective study to understand the educational and technical value of Krav Maga.

First, the use of Krav Maga programs for self-defense can be achieved by creating a safe training environment, designing a comprehensive curriculum that addresses self-defense scenarios, extensive promotion, recruiting qualified instructors, involving participants in continuous improvement efforts, collecting feedback, and implementing practical programs.

Second, the use of Krav Maga programs as a security martial art can be customized with curricula that address certified training, restraints, scenario training, weapons defense, legal awareness, teamwork, and ethical use of force to ensure a well-rounded skill set for threat management.

Third, Krav Maga as a military martial art can be seamlessly integrated into military training, tailoring the program to meet self-defense needs, working with experienced instructors, utilizing mock combat scenarios, progressively developing skills, prioritizing mental and physical health,

continuous assessment and improvement, and interdisciplinary collaboration, equipping soldiers with practical self-defense skills, and enhancing situational awareness, decision-making, and teamwork to prepare them to effectively navigate various challenges in the modern combat environment.

Fourth, the use of Krav Maga programs as a police martial art can enhance practical skills, legal awareness, and conflict resolution by working with experts to solve specific problems, implementing scenarios, prioritizing de-escalation and legal aspects, providing ongoing training, and improving officers' readiness for complex law enforcement situations.

In summary, the revitalization plan of the Krav Maga program against indiscriminate violence can emphasize the importance of tailored curriculum, certified instructors, scenario-based training, ethical considerations, periodic assessments and interdisciplinary collaborations, and can emphasize the importance of participant self-defense, bodyguards, and military personnel. and to instill training aimed at ensuring that police are equipped with practical self-defense skills, legal awareness and enhanced situational preparedness capabilities to effectively manage problems in a variety of situations. In addition, through the use of the Krav Maga program, it is judged that it can be applied in the field as a basic self-defense technique against indiscriminate assault. Through follow-up research, it is necessary to study the activation plan of the Krav Maga program and the education method according to various scenarios.

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9. Appendix

9.1. Authors contribution

	Initial name	Contribution
Lead Author	SP	-Set of concepts <input checked="" type="checkbox"/>
		-Design <input checked="" type="checkbox"/>
		-Getting results <input checked="" type="checkbox"/>
		-Analysis <input checked="" type="checkbox"/>
Corresponding Author*	KK	-Make a significant contribution to collection <input checked="" type="checkbox"/>
		-Final approval of the paper <input checked="" type="checkbox"/>
		-Corresponding <input checked="" type="checkbox"/>
		-Play a decisive role in modification <input checked="" type="checkbox"/>
Co-Author	YL	-Significant contributions to concepts, designs, practices, analysis and interpretation of data <input checked="" type="checkbox"/>
		-Participants in Drafting and Revising Papers <input checked="" type="checkbox"/>
		-Someone who can explain all aspects of the paper <input checked="" type="checkbox"/>

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