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Mindfulness and Decision Making: A Study on Wrestling Referees

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Abstract

This study was conducted to examine the relationship between mindfulness levels and decision making styles of wrestling referees. Since referees have to make instant decisions during the competition, the effect of their individual cognitive processes on their decision making mechanisms is seen as an important research area. Mindfulness is defined as the individual's awareness of the current moment and acceptance without judgement, and is associated with decision making processes in the context of sport psychology. Within the scope of the research, data were collected on a sample group consisting of wrestling referees who actively served between 2022-2023. The sample consisted of 76 participants selected by random sampling method. 'Mindfulness Scale' was used to determine the mindfulness levels of the referees and "Decision Making Styles Scale" was used to evaluate their decision making styles. Descriptive statistics were used and normality assumptions were tested, revealing that the data were normally distributed. Accordingly, t-test, ANOVA, Tukey post-hoc, and Pearson correlation analyses were conducted using SPSS 25.0, with the significance level set at p<.05. As a result of the analyses, no significant relationship was found between mindfulness levels and decision making styles of wrestling referees. However, it was also evaluated whether the referees differed according to demographic variables in terms of mindfulness levels and decision making styles. At this point, it was determined that national referees were more careful in making decisions than international referees. The results show that mindfulness does not have a direct effect on referees' decision making processes, but individual and environmental factors may be determinant on decision making mechanisms. In this context, the importance of practical training on decision making processes in referee training programmes is highlighted.

Keywords: Decision making styles, mindfulness, sport psychology, wrestling referees

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INTRODUCTION

Referees are obliged to make impartial and fair decisions in sports competitions. However, due to the nature of sport, the judgements made by referees are often split-second, difficult and pressurised decisions. This results in decisions being influenced by a number of psychological and cognitive factors (Martiny et al., 2024). Factors that have an impact on referees' decision processes include emotion management, stress, attention management, environmental pressures, and mental resilience (Sipahi, 2021). The effect of these factors becomes more evident, especially in rapidly developing sports and branches where physical contact is intense. In recent years, mindfulness has come to the fore as one of the methods of coping with these problems in sports psychology. Mindfulness is defined as being aware of the current moment and accepting this moment without judgement (Kabat-Zinn, 2003). Many studies in the sport psychology literature show that mindfulness improves athletes' performance, reduces their stress levels, and helps them to better focus their attention (Hopper, 2017; Nixdorf et al., 2023). This is also true for referees. Considering that the decision making processes of referees need to take place quickly, mindfulness practice in this process may allow referees to make healthier decisions under pressure (Babaei & Badami, 2019; Piffaretti & Carr, 2022). Mindfulness training can help referees improve their ability to cope with stress, while at the same time helping them to maintain emotional control. The relationship between mindfulness and decision making has been proven by various studies, especially on sports referees. In a study conducted on football referees, it was observed that referees with high levels of mindfulness made more accurate decisions even under high stress (Sipahi, 2021). Wrestling is a sport where physical contact is intense, rapidly developing and time pressure is high. In such sports, referees have to make instant decisions and these decisions directly affect both the sporting success and the safety of the athletes. The high level of mindfulness of wrestling referees not only improves the performance of referees, but also enables athletes to compete under fair and equal conditions. In studies conducted on wrestling referees, it has been determined that referees who have received mindfulness training make decisions in a calmer and more focused manner during the competition, and as a result, they make fewer mistakes (Babaei & Badami, 2019; Piffaretti & Carr, 2022). Mindfulness improves not only the decision making processes but also the psychological resilience and emotional regulation of referees. Referees' management of pressures in the decision making process directly affects the accuracy and reliability of their decisions. This situation allows decisions to be made more accurately and quickly in dynamic and fast sports such as wrestling. In addition to being beneficial for athletes, mindfulness can also be an important tool for referees. Referees' use of mindfulness practices in order to see the effect of the decisions they make on the field, to control their emotional reactions and to reduce instant pressure positively affects their decision making processes. It was also observed that mindfulness trainings had positive effects on referees' communication with athletes. Referees' ability to make fair, accurate, and prompt decisions in sports competitions is of great importance for both athlete safety and the integrity of the game. Especially in contactintensive sports such as wrestling, where split-second decisions must be made under pressure, examining the impact of mindfulness on referees' decision making processes is highly significant in terms of enhancing referee performance and improving the overall quality of the

sport. In conclusion, mindfulness is seen as an important tool that can improve referees' psychological resilience and decision making processes. Especially in physically contact-intensive sports such as wrestling, mindfulness practice will help referees to make calmer, more focused and objective decisions, contributing to a higher quality and safer sport (Kabat-Zinn, 1994). Accordingly, this study aims to examine the effect of mindfulness on the decision making processes of wrestling referees and to enable referees to make more objective, accurate and stress coping decisions.

METHOD

Research Model

This research, in which the relationship between mindfulness and decision making processes was tried to be examined, was designed within the scope of the relational survey model, one of the general survey models. Relational survey models are studies in which the relationship between two or more variables is examined without any intervention (Büyüköztürk, 2018). In this study, the relationship between mindfulness levels and decision making processes of wrestling referees and the relationship between mindfulness levels and some demographic characteristics were analysed.

Research Group

The population of the study consists of wrestling referees who took charge in various competitions organized in Türkiye in 2022-2023. According to the information received from the Turkish Wrestling Federation, the number of licensed wrestling referees working in official competitions in Türkiye during this period was determined as 230. This constitutes the population of the study. The sample of the study consists of wrestling referees selected by random sampling method and there are 76 participants in total. The scales were applied to the sample group by the researcher in 2022-2023 by explaining the purpose and scope of the research and collected by the researcher. The study was reviewed and approved by the Ağrı İbrahim Çeçen University Scientific Research Ethics Committee.

Data Collection Tools

The Mindfulness Scale: was developed by nn and Ryan (2003) and adapted into Turkish by Özyeşil et al. (2011). Consisting of 15 items, the likert-type scale includes the statements "almost always", "most of the time", "sometimes", "rarely", "quite rarely" and "almost never". The scale measures a single-factor structure and high scores indicate that mindfulness is high and low scores indicate that mindfulness is low. According to the study of Özyeşil et al. (2011) the internal consistency coefficient of the scale was=.80 and the test-retest correlation coefficient was calculated as r=.86.

Decision Making Styles Scale: The reliability of the MKVÖ I-II was calculated by test repetition and internal consistency methods. In the academic year 2002-2003, 56 students at S.U. Faculty of Technical Education were administered the test at three-week intervals. The reliability coefficients obtained by repeating the test are as follows: careful decision making r=.83, avoidant decision making r=.87, procrastinating decision making r=.68, panic decision making r=.84 (Deniz, 2004).

Data Analysis

In the analysis of the data obtained in the study, frequency, percentage, mean and standard deviation values were calculated using descriptive statistics. As a result of the analyses performed to evaluate the normality assumption of the data, it was determined that the skewness and kurtosis values calculated for the sub-dimensions were in the range of -1.5 to +1.5 (Tabachnick et al., 2013), which revealed that the data set showed a normal distribution. Accordingly, parametric tests were preferred in the statistical analyses of the study. Skewness and Kurtosis tests were applied to test the assumptions of normal distribution. In cases where the data showed normal distribution, t-test and ANOVA analyses were used to examine the differences between groups. Independent groups t-test was applied to determine whether the levels of mindfulness and decision making processes of wrestling referees show significant differences according to binary variables such as marital status, refereeing level and education level. One-way analysis of variance (ANOVA) was used to test whether the referees' mindfulness levels and decision making processes differed according to variables with three or more categories such as professional experience (Tabachnick et al., 2013). In cases where significant differences were detected, tukey post-hoc tests were applied to determine which groups the differences were between. In addition, Pearson Correlation analysis was conducted to determine the relationship between mindfulness and decision making processes. This analysis allows to examine the linear relationship between two continuous variables (Field, 2013). All data were collected online using digital survey tools to ensure accessibility and convenience for participants. The results of the correlation analysis were used to assess whether there was a significant relationship between mindfulness and decision making processes. All analyses were performed using SPSS (Statistical Package for the Social Sciences) 25.0 software and statistical significance level was accepted as p<.05.

Table 1. Skewness and kurtosis distributions of the scale scores used in the study

Scales	Min Max	Max	Χ̄	SD.	Skewness	Std. Kurtosis		Std.
Scales	171111	Max	Λ		SKC WIICSS	error	ixui tosis	error
Mindfulness	47.00	90.00	66.96	9.005	.173	.276	129	.545
Decision making Styles	29.00	62.00	48.22	6.069	451	.276	.796	.545
Careful	6.00	15.00	7.65	2.157	1.504	.276	1.829	.545
Avoidant	8.00	18.00	15.09	2.327	714	.276	.220	.545
Procrastinator	5.00	15.00	12.43	2.229	879	.276	.651	.545
Panic	7.00	15.00	13.03	1.935	987	.276	.436	.545

According to the table 1, the levels of mindfulness (Mean=66.96, SD=9.005) and decision making styles (mean=48.22, SD=6.069) were generally moderate to high. The skewness and kurtosis values fell within the acceptable range of -1.5 to +1.5, indicating that the data were normally distributed. Among the sub-dimensions, the "Careful" style showed a positive skewness (skewness=1.504), suggesting that some participants scored relatively low in this dimension. In contrast, the avoidant, procrastinator and panic styles displayed negative skewness values, indicating a tendency among participants to score higher in these dimensions (Table 1).

FINDINGS

Table 2. T test results of mindfulness scale and decision making styles scale and sub-dimensions scores according to marital status variable

Scales	Marital status	n	Χ̄	SD.	sh_x	t	f	p
Mindfulness	Married	51	66.25	9.33	1.30	975	.033	.314
Mindiumess	Single	25	68.40	8.29	1.65	973		.314
Decision making	Married	51	47.96	5.66	.79	537	1.688	.619
Styles	Single	25	48.76	6.92	1.38	557	1.088	.019
Careful	Married	51	7.54	2.07	.29	626	.030	.552
Careiui	Single	25	7.88	2.35	.47			.552
Avoidant	Married	51	15.21	2.06	.28	.659	2.005	.557
Avolualit	Single	25	14.84	2.82	.56			.557
Procrastinator	Married	51	12.29	2.28	.31	780	.264	.428
Procrastinator	Single	25	12.72	2.13	.42			.428
Donio	Married	51	12.90	1.94	.27	002	007	290
Panic	Single	25	13.32	1.93	.38	883	.007	.380

According to the table 2, the effect of marital status on the sub-dimensions of mindfulness and decision making styles was analysed. According to the t-test results between married and single individuals, no significant difference was found between the two groups in terms of mindfulness, careful decision making, avoidant decision making, procrastinatory decision making and panic decision making styles. This shows that marital status has no significant effect on these criteria and that individuals in both groups show similar characteristics. In other words, it can be said that being married or single is not a factor that changes mindfulness and decision making styles (Table 2).

Table 3. T test results of mindfulness scale and decision making styles scale and sub-dimensions scores according to educational status variable

Scales	Educational Status	n	Ā	SD.	sh _x	t	f	р
Mindfulness	Licence	52	66.17	8.57	1.18	-1.124	2.127	.265
Minutumess	Postgraduate	24	68.66	9.84	2.00	-1.124	2.127	.203
Decision Making	Licence	52	48.00	5.12	.71	404	7.288	.689
Styles	Postgraduate	24	48.70	7.84	1.60	404	1.200	.089
Careful	Licence	52	7.53	2.05	.28	708	.517	.481
Careiui	Postgraduate	24	7.91	2.39	.48			.461
Avoidant	Licence	52	14.96	2.09	.29	717	2.541	.475
Avoidant	Postgraduate	24	15.37	2.79	.57	717		.473
D.,	Licence	52	12.40	2.04	.28	174	1.065	972
Procrastinator	Postgraduate	24	12.50	2.63	.53	174		.863
Dania	Licence	52	13.09	1.72	.23	274 2556		710
Panic	Postgraduate	24	12.91	2.35	.48	.374	2.556	.710

According to the table 3, the differences between educational level (undergraduate and graduate) and the sub-dimensions of mindfulness and decision making styles were examined. According to the t-test results, no significant difference was found between undergraduate and graduate groups in terms of mindfulness, careful decision making, avoidant decision making, procrastinatory decision making and panic decision making styles. This shows that the level of education does not have a significant effect on these criteria. For example, although postgraduate participants scored slightly higher on the mindfulness scale (\bar{x} =68.66) than undergraduates (\bar{x} =66.17), this difference was not statistically significant (p=.265). Similarly,

in all sub-dimensions of the decision-making styles scale, the mean scores of the postgraduate group were slightly higher, yet none of the differences reached significance (p=.689 for overall decision-making styles, p=.475 for avoidant style). Both groups exhibit similar characteristics, indicating that educational status is not a factor that changes mindfulness and decision making styles (Table 3).

Table 4. T test results of mindfulness scale and decision making styles scale and sub-dimensions scores according to refereeing level variable

Scale	Refereeing Level	n	Ā	SD.	sh_x	t	f	p
Mindfulness	National	50	67.20	8.58	1.21	.320	1.788	.750
Minutumess	International	26	66.50	9.93	1.94	.320	1.700	.730
Decision Making	National	50	48.32	5.82	.82	.191	.028	.856
Styles	International	26	48.03	6.63	1.30	.191		.630
Careful	National	50	7.96	2.33	.33	1.915	4.166	.040*
Careiui	International	26	7.07	1.64	.32		4.100	.040
Avoidant	National	50	14.94	2.25	.31	788	.109	.433
Avoidant	International	26	15.38	2.48	.48	/00	.109	.433
Procrastinator	National	50	12.52	2.13	.30	.463	.028	.645
Procrastiliator	International	26	12.26	2.44	.47	.463	.028	.043
Panic	National	50	12.90	1.83	.25	220	000	.750
ranic	International	26	13.30	2.13	.41	.320	.320 .000	.730

^{*}p<.05

According to the table 4, the differences between the level of refereeing (national and international) and the sub-dimensions of mindfulness and decision making styles were analysed. According to the t-test results, in general, there was no significant difference between national and international referees in mindfulness, avoidant, procrastinator and panic decision making styles (p>.05). However, it was observed that national level referees ($\bar{x}=7.96$) scored significantly higher than international level referees ($\bar{x}=7.08$) in the careful decision making style (p<.05). This may indicate that national level referees make more careful judgements (Table 4).

Table 5. Pearson correlation test results to determine the relationship between the participants' mindfulness styles scale and decision making styles scale and its subscales

Variables	Mindfulness					
v at tables	n	r	р			
Decision making Styles	76	.119	.305			
Careful	76	139	.232			
Avoidant	76	.173	.135			
Procrastinator	76	.166	.151			
Panic	76	.129	.268			

According to the table 5, the relationships between mindfulness scale and decision making styles scale and its sub-dimensions were analysed by pearson correlation test. The results are as follows: There is a weak positive relationship between the general score of decision making styles and mindfulness (r=.119, p=.305), but this relationship is not statistically significant (p>.05). A negative relationship was observed between mindful decision making style and mindfulness (r=-.139, p=.232), but this relationship was not statistically significant. A weak positive relationship was found between avoidant decision making style and mindfulness (r=.173, p=.135), which was not significant. A weak positive relationship

(r=.166, p=.151) was also found between procrastinative decision making style and mindfulness, but it was not significant. There is also a weak positive relationship (r=.129, p=.268) between panic decision making style and mindfulness, but this relationship is not significant. As a result, there is no significant relationship between mindfulness and decision making styles and their sub-dimensions (p>.05). This shows that participants' mindfulness levels do not play an important role in determining their decision making styles (Table 5).

DISCUSSION AND CONCLUSION

According to the findings of this study, no significant difference was found between the relationships between mindfulness and decision making styles and group comparisons. The study shows that the participants' mindfulness levels do not have a significant effect on their decision making styles. At the same time, the effects of marital status, educational status and refereeing level on these criteria were not found to be significant. Although these findings are in contrast to some studies in the literature, they provide some important implications.

Marital Status, Education and Refereeing Level

It was found that marital status did not affect mindfulness and decision making styles. The fact that the differences between the married and single groups were not statistically significant was contrary to the studies in the literature suggesting that marital status has significant effects on individuals' psychological characteristics (Härter et al., 2015). This suggests that individuals' mindfulness levels and decision making styles are shaped independently of marital status. Similarly, no significant difference was found between educational level (undergraduate and graduate) and mindfulness and decision making styles. Although many studies suggest that higher levels of education are more effective in individuals' decision making processes (Katz & Toner, 2013; Wang & Chopel, 2017), no significant relationship was found between educational level and decision making styles in this study. This indicates that education level and decision making styles may develop differently in each individual and that individual factors are also important.

Similarly, comparisons made according to the level of refereeing did not show significant differences. While there was no significant difference between national and international referees in general mindfulness levels, a significant difference was observed only in the careful decision making style. National level arbitrators were found to make more careful judgements. This may indicate that while international level arbitrators are a more experienced group or face a more diverse set of situations, national level arbitrators are more careful in their judgements at the local level. These results suggest that individuals' decision-making styles and awareness levels may be more dependent on individual and contextual factors rather than marital status, educational level, or refereeing level.

Relationships between Mindfulness and Decision Making Styles

The correlation analysis between mindfulness and decision making styles also provides interesting results. In general, weak relationships were found between mindfulness and the sub-dimensions of decision making styles, but these relationships were not statistically significant. Although it is suggested in the literature that mindfulness facilitates making

healthier and more informed decisions (Zeidan et al., 2010), the findings of this study suggest that participants' mindfulness levels do not play a significant role in determining their decision making styles. This suggests that mindfulness and decision making processes have multifaceted and complex interactions and that mindfulness level alone is not sufficient to determine decision making processes. Recent studies highlight that decision making is influenced not only by mindfulness but also by other psychological factors such as emotional intelligence and stress management (Sánchez-Ruiz et al., 2021). This aligns with the current findings, suggesting that mindfulness alone may not fully explain variations in decision making styles, emphasizing the need to consider a broader range of cognitive and emotional variables in future research (Glomb et al., 2011).

In particular, the negative relationship between mindful decision making style and mindfulness is contrary to some findings in the literature. However, the fact that this relationship is not significant indicates that individuals' mindfulness levels do not have a direct effect on determining their decision making styles. In this context, decision-making processes should be evaluated using a more holistic approach; focusing only on the level of mindfulness may be insufficient. Therefore, future studies should consider psychological variables such as emotion regulation, stress management, and cognitive flexibility, in addition to mindfulness.

In conclusion, this study revealed that the relationship between mindfulness and decision-making styles is not as strong or direct as expected. Decision-making processes, which are shaped by the influence of different individual and environmental factors, should be considered as multidimensional structures. Although the findings contradict some studies in the literature, they show that mindfulness level alone is not a determining factor in decision-making styles. This emphasizes the multidimensional nature of the subject and indicates that more comprehensive models should be developed in future studies.

Conclusions and Future Research

This study suggests that the interaction of mindfulness and decision making styles should be examined more extensively. Future studies should examine the relationship between mindfulness and decision making processes in more depth by increasing the sample size and considering different demographic groups. In addition, it is understood that other psychological factors affecting decision making styles should also be investigated.

Limitations and Recommendations

Although the study provides valuable insights, it also has several limitations. First, the comparison with existing literature remains relatively limited, and the contradictory findings in previous studies could be further explored to contextualize the current results. Second, the sample consists entirely of referees from Türkiye, which may limit the generalizability of the findings to other cultural or sporting contexts. Potential sampling bias and the homogeneity of the participant group should be acknowledged. Future research should address these limitations by incorporating more diverse and international samples, and by adopting a more cautious approach to generalizing the results across populations.

Recommendations

It is recommended to include mindfulness-based stress management and attention-focused practices in referee training programs.

It is suggested to investigate individual and environmental factors affecting referees' decision making processes in relation to mindfulness.

It is recommended to comparatively examine the relationship between mindfulness and decision making processes across referees from different sports branches.

It is suggested to test the effects of long-term and regular mindfulness training on referees' decision making skills.

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Contribution Rate	Contributors
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Statement of Ethics Committee

This research was conducted with the decision of Ağrı İbrahim Çeçen University Ethics Committee dated 27.03.2025 and numbered E-95531838-050.99-130109.

Statement of Conflict

Researchers do not have any personal or financial conflicts of interest with other people and institutions related to the research.

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