Original article

Determination of Eating Attitude and Mindful Eating Scores of Patients in Turkey

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Abstract. The present study aims to evaluate the status of eating attitude and mindful eating of adult patients (n=905) who applied to diet polyclinics in hospitals in Afyonkarahisar, Turkey. The data were collected by face-to-face interviews using a 4-part questionnaire form, including socio-demographic features and nutritional habits, anthropometric measurements, Eating Attitude Test (EAT-40) and Mindful Eating Questionnaire (MEQ-30). In total, 5.4% of patients had eating disorders; underweight patients were associated significantly with an overall eating disorder ($p<0.05$), females EAT-40 scores were higher than males ($p<0.001$). Diet application before coming to the clinic, diet type, home delivery fast food consumption and night eating were significantly different associated with an eating disorder ($p<0.05$). The MEQ-30 total score ($\bar{x}\pm SE$) of the patients was 2.82±0.45 ($p<0.05$) and emotional eating, eating control, awareness, disinhibition, and interference significantly differed ($p<0.05$). Underweight patients in both EAT-40 and MEQ-30 total scores differed ($p<0.05$) in other BMI groups. Disinhibition, emotional eating and eating control had an impact ($p<0.05$) on sub-scales of MEQ-30. EAT-40 total scores were not correlated, but MEQ-30 total scores had a weak correlation ($r=0.106$; $p<0.000$) by BMI and a positive correlation between total MEQ-30 and all subscale scores ($p<0.000$). The findings suggest that differences between eating disorder predisposition and mindful eating sub-scales differed in BMI and eating attitude and of patients' awareness should be increased and patients can be informed about this issue through further nutrition counseling.

Key words: Mindful eating, eating disorder, eating attitudes.

Introduction

Obesity, which has been at the forefront of non-communicable diseases in the last few decades, is directly related to eating behaviors along with other factors [1-4]. In this context, nutrition is not only the physiological consumption of food but also a form of behavior consisting of psychological, social, and cultural components [5-9]. Beliefs, behaviors, feelings, emotions, and other environmental and personal factors establish eating attitudes on foods. Physiological, emotional, and social roles include the normal eating attitude to be displayed and the correct understanding of food in life [10-13]. Eating attitudes include the physiological effects of food and nutritional value, culture, and demographic characteristics [14-19]. In this view, eating attitudes are also associated with the concept of eating awareness, which has been frequently mentioned in recent years. It is possible to make healthier food choices by increasing the attention paid to eating behavior, internalizing the food consumed and reducing the sensitivity to thoughts and emotions during food consumption [20-22]. Mindful eating is of crucial importance today in learning proper nutrition, weight control, awareness of society and prevention of detection of nutritional diseases. Mindful

eating, by realizing why and how eating behavior occurs rather than what kind of food is eaten, by physically assimilating the notions of hunger-satiety, being aware of the effects of emotions and thoughts, without being affected by environmental factors, focusing on the present moment and the food to be consumed without prejudice [23-27]. The purpose of mindful eating is to feel the taste of the food consumed at each consumption moment. Thus, it can be ensured that the individual is aware of the food consumed and makes healthier and satisfying choices. Mindful eating helps ensure also be aware of what type of hunger he has, and accordingly determine when he will start eating and when he will stop, and he should direct himself. Mindful eating has been shown to have an effective role in reducing the desire for excessive consumption of foods, reducing weight gain, and thus in weight control [28-31]. The present study aims to investigate the socio-demographic, anthropometric measurements, nutritional habits, eating attitudes and mindful eating the differences between the variables of the patients who consulted to the diet outpatient clinics. Mindful eating was also expected to modify dysregulated or negative emotions and attitudes against healthy eating behaviour and sustain ideal eating behaviour all over the life.

Method

This study was performed as a randomized sampling survey model to interact between mindful eating scores and eating attitudes. The sample size was calculated two independent means (two groups) applied by power analysis using G*Power 3.1.9.2 software program. The parameters were entered in G*Power as 0.12 for effect length, 0.05 for error (α) and 0.95 for power (1-β) and the sample size was calculated 905. The study group was the voluntary participants' ages between 19-65 who appealed to the diet polyclinics of the of Afyonkarahisar Health Sciences University and State Hospitals in Afyonkarahisar, Turkey. The study permission was obtained from the Non-Invasive Clinical Research Ethics Committee of the Faculty of Health Sciences of Selcuk University.

The data were collected with a questionnaire using face-to-face interviews. In the designing of a semi-structured questionnaire, three nutrition academic experts were assisted, and a questionnaire was created in the light of the necessary corrections. The questionnaire consisted of three parts: demographic characteristics and anthropometric measurements, Mindful Eating Questionnaire (MEQ-30) and Eating Attitude Test (EAT-40). Demographic information of the participants was taken according to their own statements. Anthropometric measurements, such as height (m) and body weight (kg), were obtained by the dietician in diet polyclinics, calculated and categorized for Body Mass Index (BMI) (kg/m^2). EAT-40 was developed by Garner and Garfinkel [32] and then adapted to Turkish by the validity (Cronbach α: 0.70) and reliability study performed by Savaşır and Erol [33]. It consisted of 40 items with 6 Likert-type scales and 1., 18., 19., 23., 27., and 39. items were scored in reverse. The cut-off point is 30. As the score of the scale increases, the eating attitude deteriorates. The score of the scale shows a non-disposition eating behavior below 30 points, and a score of 30 and above indicates disposition eating behavior [33]. The Turkish version of EAT-26 has not been made yet. The MEQ-30, which was upgraded by Framson et al. [34] and adapted to Turkish transformed by Köse et al. [35], was used, and it was scored 5-pointed scale never, rarely, sometimes, often, and usually/always. MEQ-30 was divided into seven factors, such as disinhibition, emotional eating, eating control, awareness, eating discipline, mindful eating, and interference. Cronbach α of the MEQ-30 was 0.73 [35].

The data were analyzed using SPSS 25.0 (IBM Corporation, USA) software program. Quantitative variables were shown in the tables as mean and standard error ($\bar{x}\pm SE$), and categorical variables as number (n) and percentage (%). The normality of data was evaluated using Kolmogorov-Smirnov and Shapiro-Wilk tests. It was used in parametric (e.g., independent t-test) and non-parametric (e.g., Chi-Square) test results to compare two independent groups according to qualitative and/or quantitative data. Correlation and regression were used to identify the relationships between scores and variables.

Results

The findings showed that 35.2% of the patients were male, 64.8% female. Primary, secondary, high school, graduate and postgraduate education levels were 8.7%, 8.1%, 40.2%, 39.8% and 3.2%, respectively, and the average age of the patients ($\bar{x}$±SE) was 32.31±2.34 years. When the patients were evaluated according to their BMI, 10.1% were underweight, 51.4% were normal, 27.5% were overweight and 11% were obese (Table 1).

Given the total score of EAT-40, the average value of female patients ($\bar{x}$ ±SE) was (15.0±0.170) to be significantly higher than males (12.0±0.613) ($p<0.001$). The analysis of the eating disorder status of all patients showed that 5.4% had an eating disorder, females (6.1%) higher than males (4.1%) and no difference found ($p>0.05$). In underweight patients, eating disorders were higher (12.1%) than others and BMI groups were differed by eating disorder assessment of EAT-40 scores ($p<0.05$). Table 2 shows that the patients' diet before going to the diet clinic was significantly different in terms of eating disorders ($p<0.05$).

Another finding was that weight loss was the most chosen diet by the patient for both eating disorder groups ($p<0.05$). Especially when the consumption of fast foods was examined, the levels of those with and without eating disorders were 42.2% and 57.8% respectively, and significantly difference were detected by groups ($p<0.05$). Another remarkable finding was that patients with eating disorders woke up at night and had a higher level of food consumption (12.5%) than others (22.4%) ($p<0.05$). In recent years, this situation, which was Night Eating Syndrome and closely associated with eating attitudes, is also a phenomenon that overlaps with disordered eating behaviors.

In Table 3, MEQ-30 score findings showed that emotional eating, eating control, awareness, mindful eating, and interference significantly differed in seven sub-dimensions ($p<0.000$), and the total score of the MEQ-30 mean was higher in males than females, but it did not vary ($p>0.05$). Eating discipline had higher mean scores in all groups and emotional eating in males; eating control in females had the lowest mean scores.

Table 1. Eating disorder assessment of patients

	No		Yes		
Gender	**n**	**%**	**n**	**%**	***p***
Male (n=319)	306	95.9	13	4.1	0.189
Female (n=586)	550	93.9	36	6.1	
Total (n=905)	856	94.6	49	5.4	
BMI					
Underweight (n=91)	80	87.9	11	12.1	*0.029*
Normal (n=465)	444	95.5	21	4.5	
Pre-obese (n=247)	234	94.7	13	5.3	
Obese (n=102)	98	96.0	4	4.0	
Total (n=905)	856	94.6	49	5.4	

Table 2. Dieting, diet type, fast food consumption and night eating situations of patients

	Eating Disorder				
Have You Dieting Before?	**Yes**		**No**		***p***
	n	**%**	**n**	**%**	
Yes	21	42.9	253	29.6	*0.049*
No	28	57.1	603	70.4	
Total	49	100.0	856	100.0	
Diet Type					
None	28	57.1	603	70.4	*0.040*
Weight-loss	11	22.4	120	14.0	
Weight-gain	2	4.1	44	3.6	
Diabetes	1	2.0	13	1.5	
Low fat	3	6.1	11	1.3	
Other (e.g. celiac, diarrhea)	4	8.3	78	9.2	
Total	49	100.0	856	100.0	
Fast Food Consumption					
Yes	22	44.9	495	57.8	*0.026*
No	27	55.1	361	42.2	
Total	49	100.0	856	100.0	
Night Eating					
Yes	11	22.4	107	12.5	*0.044*
No	38	77.6	749	87.5	
Total	49	100.0	856	100.0	

Table 3. MEQ-30 scores of patients by eating disorder

MEQ-30	Eating Disorder		t**	p
	Yes (n=49)*	No (n=856)*		
Disinhibition	3.06±0.162	2.79±0.026	2.231	*0.026*
Emotional Eating	3.01±0.178	2.66±0.033	2.378	*0.018*
Eating Control	2.64±0.148	2.36±0.029	2.150	*0.032*
Awareness	2.74±0.073	2.88±0.014	-1.829	0.073
Eating Discipline	2.53±0.119	3.07±0.024	4.422	*0.000*
Mindful Eating	3.22±0.074	3.21±0.018	0.231	0.818
Interference	2.77±0.163	2.49±0.029	2.158	*0.031*
Total Score	2.88±0.081	2.81±0.015	0.784	0.437

*$\bar{x}$±SE **Independent Samples t-test

Table 4. EAT-40 and MEQ-30 score analysis of BMI

Underweight		BMI*					
		Normal	Pre-Obese	Obese	F**	p	
EAT-40	Total Score	18.1±1.051 [a]	15.0±0.410 [b]	15.1±0.597 [b]	16.0±0.922 [ab]	3.059	*0.028*
MEQ-30 Sub-dimensions	Disinhibition	2.61±0.969 [a]	2.77±0.368 [ab]	2.90±0.491 [b]	2.91±0.754 [b]	3.817	*0.010*
	Emotional Eating	2.74±0.101 [a]	2.72±0.473 [a]	2.65±0.061 [ab]	2.50±0.994 [b]	1.722	*0.045*
	Eating Control	2.01±0.805 [a]	2.29±0.395 [b]	2.57±0.562 [c]	2.64±0.875 [c]	13.990	*0.000*
	Awareness	2.85±0.045	2.88±0.019	2.87±0.025	2.85±0.051	0.229	0.876
	Eating Discipline	3.01±0.083	2.99±0.033	3.07±0.045	3.17±0.077	1.884	0.101
	Mindful Eating	3.22±0.057	3.17±0.025	3.24±0.034	3.26±0.054	1.269	0.084
	Interference	2.50±0.094	2.50±0.040	2.55±0.057	2.48±0.083	0.192	0.902
	Total	2.74±0.047 [a]	2.80±0.020 [b]	2.87±0.029 [c]	2.86±0.042 [c]	2.452	*0.025*

*$\bar{x}$±SE** ANOVA Test, [a,b,ab,c] Duncan Test Difference of Groups

Table 4 represent that EAT-40 scores of participants were evaluated concerning BMI; difference found between groups ($p<0.05$). On the other hand, disinhibition, eating control and eating discipline scores differed from subscale together with total MEQ-30 ($p<0.05$). In EAT-40, the total score of underweight patients differed from other BMI groups. When the MEQ-30 subscales were examined in disinhibition underweight and emotional eating sub-scale, obese patients varied due to others. In eating control scores, underweight and normal patients were differed, unlike pre-obesity and obese patients. We analyzed the total score of the MEQ-30 scale. Similar results were determined as eating control results. It was seen that the underweight group differed from others as in EAT-40 and MEQ-30 total score and sub-dimension results.

The relationship was analyzed between EAT-40, MEQ-30 total scores, and BMI as shown in Table 5, EAT-40 total scores were not correlated on the BMI results ($p>0.05$).

Otherwise, because of the regression analysis, a positive weak relationship between MEQ-30 total scores and BMI was found ($p<0.001$). On the other hand, disinhibition, emotional eating, eating control and interference scores were detected a strong positive correlation towards MEQ-30 total scores; however, mindful eating and awareness scores were a moderate and weak correlation, respectively.

Table 5. Relationship between EAT-40, MEQ-30 scores and BMI

Dependent Variable	Independent Variable	*r*	B	SE	β	p*
BMI	EAT-40	0.005	-0.002	0.017	-0.005	0.886
	MEQ-30	0.106	1.116	0.349	0.106	*0.001*
MEQ-30 Sub-dimensions	Disinhibition	0.806	0.453	0.011	0.806	*0.000*
	Emotional Eating	0.743	0.334	0.010	0.743	*0.000*
	Eating Control	0.701	0.361	0.012	0.701	*0.000*
	Awareness	0.226	0.239	0.034	0.226	*0.000*
	Eating Discipline	0.466	0.287	0.018	0.466	*0.000*
	Mindful Eating	0.443	0.367	0.025	0.443	*0.000*
	Interference	0.602	0.309	0.014	0.602	*0.000*

*Linear Regression

Earlier studies [36-37] conducted on students in Turkey with EAT-40 show that no significant difference was found according to the gender and the EAT-40 score of 71.1% of the students was between 3-30 points and does not have the eating disposition, while the EAT-40 score of 28.9% was higher than 30 points and has an eating disposition. Almost three-thirds of students were at risk of eating behavior; those with a fear of gaining weight had a higher tendency to both had eating disorders. Framson et al. [34] emphasized that the MEQ score was inversely associated with BMI. Moor et al. [38] showed a significant negative correlation between BMI and overall mindful eating score. Moreover, along with them, some sub-dimensions differed among themselves in MEQ. Durukan and Gul [39] represented that mindful eating plays a major role in long-term weight maintenance. In contrast, other studies [40, 41] in college students' mindful eating did not correlate with other variables. Basir et al. [42] indicated that mindful eating did not differ in overweight and obese participants. Özkan and Bilici [43] and Oral and Sahin [44] suggest that anthropometric measurements are good indicators to predict and effects of initiative and mindful eating. Sagui-Henson et al. [45] and Santamaria et al. [46] found that mindful eating scores were correlated in body weight change time and body weight. A few studies [47,48] argued that dietary restraint was associated with mindful eating and disinhibition sub-dimension. In Köse's [49] study, EAT-40 scores were related to only underweight patients. Besides concerning BMI, both EAT-40 and MEQ-30 scores differed. BMI may be the primary factor in eating behaviors and awareness.

Conclusion

Significant findings emerged among patients, such as dieting, diet type, fast food consumption and night eating. These findings are shaped by variables, such as socio-cultural and demographic factors and age, among patients. The fact that males (4.1%) are less prone to eating than females and the total (6.1%) is in line with other studies. The differentiation of BMI groups concerning EAT-40 scores and an eating disorder, especially the highest in underweight individuals, it can be explained by that they have a negative attitude towards healthy eating behaviors. The literature results obtained against eating disorders of underweight individuals, such as anorexia nervosa and bulimia nervosa, also explain the findings. Only disinhibition and eating discipline did not differ from the MEQ-30 scores according to gender, but it was caused by main markers, such as body weight and BMI. Another point that is stated as the most important is that EAT-40 scores are not correlated with BMI, and MEQ-30 scores are directly related to BMI and in all sub-dimensions, and it can be emphasized that eating awareness is more important concerning BMI than eating attitudes.

The main limitation is that the eating attitudes and awareness of individuals who applied to diet polyclinics may change according to the dietitian consultation

before. Thus, individuals' eating attitudes and awareness profiles can be significant concerning variables, such as BMI, especially in maintaining diet and health, in the fight against obesity-related to nutrition in non-communicable disease, which is a pandemic in the world, especially by changing and maintaining weight control and healthy eating behaviors. There is a need for more scientific-based and even experimental model studies on this subject. Despite these results of the EAT-40 and MEQ-30 scores, it should be detected as early as possible in all eating disorders and other eating attitudes and behavior. In addition to the use of mindful eating in an intervention for overweight or obese patients, it is important to include eating attitudes that can improve healthy food choice and behaviors affect to shed light on future studies.

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References

1. Yang ZY, Yang Z, Zhu L, Qiu C. Human behaviors determine health: strategic thoughts on the prevention of chronic non-communicable diseases in China. Int J Behav Med 2011; 18:295–301.
2. World Health Organization. Technical report series. Diet, Nutrition And The Prevention Of Chronic Diseases. Geneva: WHO 2003; p. 1–149.
3. World Health Organization. Noncommunicable Diseases: Key Facts 2018; Available online at: https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases
4. Mikkelsen B, Williams J, Rakovac I, et al. Life course approach to prevention and control of non-communicable diseases. BMJ 2019; 364:l257.
5. Chen PJ, Antonelli M. Conceptual models of food choice: influential factors related to foods, individual differences, and society. Foods 2020;9(12).
6. Roudsari AH, Omidvar N, Amiri P, et al. Determinants of food choice in Iranian adults: a life course perspective. Ann Nutr Metab 2017;71:613-619.
7. Aktaş N, Özdoğan Y. Gıda ve Beslenme okuryazarlığı. Harran Tarım ve Gıda Bilimleri Dergisi 2016; 20(2): 146-153.
8. Monterrosa EC, Frongillo EA, Drewnowski A, de Pee S, Vandevijvere S. Sociocultural influences on food choices and implications for sustainable healthy diets. Food and Nutrition Bulletin 2020;41(2_suppl):59S-73S.
9. Lindgren, E, Harris, F, Dangour, AD, et al. Sustainable food systems—a health perspective. Sustain Sci 2018;13(6):1505–1517.
10. Serin Y, Sanlier N. Emotional eating, the factors that affect food ıntake, and basic approaches to nursing care of patients with eating disorders. J Psychiatr Nurs 2018;9(2):135-46.
11. Wehling H, Lusher JM. Cognitive and emotional ınfluences on eating behaviour: a qualitative perspective. Nutr Metab Insights 2019;12.
12. Aikman SN, Min KE, Graham D. Food attitudes, eating behavior, and the information underlying food attitudes. Appetite 2006;47(1):111-4.
13. Alvarenga MS, Scagliusi FB, Philippi ST. Changing attitudes, beliefs and feelings towards food in bulimic patients. Arch Latinoam Nutr 2008;58(3):274-9.
14. Scaglioni S, De Cosmi V, Ciappolino V, Parazzini F, Brambilla P, Agostoni C. Factors influencing children's eating behaviours. Nutrients 2018;10(6).
15. Grayling AC. 'Harvest of hope': A guide to mindful eating. New York Rev Books 2008;55(8):45-47.
16. Hanly T. Eat, drink and be mindful. Eur Eat Disord Rev 2011;19(2):E1-E2.
17. Hendrickson KL, Rasmussen EB. Mindful eating reduces impulsive food choice in adolescents and adults. Health Psychol 2017;36(3):226-35.
18. Hong PY, Lishner DA, Han KH. Mindfulness and eating: an experiment examining the effect of mindful raising eating on the enjoyment of sampled food. Mindfulness 2014;5(1):80-7.
19. Khan Z, Zadeh ZF. Mindful eating and it's relationship with mental well-being. Procd Soc Behv 2014;159:69-73.
20. 20.Bianchi, C.M., Huneau, JF., Le Goff, G. et al. concerns, attitudes, beliefs and ınformation seeking practices with respect to nutrition-related ıssues: a qualitative study in French pregnant women. BMC Pregnancy Childbirth *2016;* 16, 306.
21. Fialova, L. Health Education and Lifestyles in the Czech Republic, Psychology of health - biopsychosocial approach, simon george taukeni, IntechOpen, (November 5th 2018) DOI: 10.5772/intechopen.77364. Available from: https://www.intechopen.com/chapters/61981
22. Oldershaw, A., Startup, H. and Lavender, T. Anorexia nervosa and a lost emotional self: a psychological formulation of the development, maintenance, and treatment of anorexia nervosa. Front. Psychol **2019;10:219.**
23. Harris C. Mindful Eating: Studies Show This Concept Can Help Clients Lose Weight and Better Manage Chronic Disease. Today's Dietitian 2013;15:42.
24. Mason AE, Epel E, Aschbacher K, et al. Reductions in reward-driven eating mediate effects of a mindfulness-based program on weight loss in obesity: data from an act. Ann Behav Med 2016;50:S228-S.

25. Ozkan N, Bilici S. Are Anthropometric Measurements an indicator of intuitive and mindful eating? Eat Weight Disord-St 2021;26(2):639-48.
26. Simonson AP, Davis KK, Gibbs BB, Venditti EM, Jakicic JM. Comparison of mindful and slow eating strategies on acute energy intake. Obes Sci Pract 2020;6(6):668-76.
27. Sloan AL, Colleran KM, Shelley B. A pilot study investigating the association between mindful eating and living (meal), weight loss, and biologic markers of ınflammation and metabolism in obese subjects. J Invest Med 2007;55(1):S95-S.
28. Timmerman GM, Brown A. The Effect of a mindful restaurant eating ıntervention on weight management in women. J Nutr Educ Behav 2012;44(1):22-8.
29. Timmerman GM, Brown A, Mouton MS. Effectiveness of a mindful restaurant eating intervention on weight management. Ann Behav Med 2011;41:S101-S.
30. Winkens LHH, Elstgeest LEM, van Strien T, Penninx BWJH, Visser M, Brouwer IA. Does food intake mediate the association between mindful eating and change in depressive symptoms? Public Health Nutr 2020;23(9):1532-42.
31. Manku RS, Egan H, Keyte R, Hussain M, Mantzios M. Dieting, mindfulness and mindful eating: exploring whether or not diets reinforce mindfulness and mindful eating practices. Health Psychol Rep 2020;8(1):59-67.
32. Garner DM, Garfinkel PE. The eating attitudes test: an ındex of the symptoms of anorexia nervosa. Psychol Med 1979;9(2):273-9.
33. Savaşır I, Erol N. Yeme tutum testi:anoreksiya nervosa belirtileri indeksi. Psikoloji Dergisi 1989;7(23):19-25.
34. Framson C, Kristal AR, Schenk JM, Littman AJ, Zeliadt S, Benitez D. Development and validation of the mindful eating questionnaire. J Am Diet Assoc 2009;109(8):1439-44.
35. Köse G, Tayfur M, Birincioğlu I, Donmez A. Adaptation study of the mindful eating questionnaire (MEQ) into Turkish. Journal Of Cognitive-Behavioral Psychotherapy And Research 2016;5(3):125-34.
36. Kose G, Ciplak ME. Does mindful eating have a relationship with gender, body mass ındex and health promoting lifestyle? Prog Nutr 2020;22(2):528-35.
37. Köse G TM. BMI, Physical activity, sleep quality, eating attitudes, emotions: which one is affected by mindful eating? Prog Nutr 2021;23.
38. Moor KR, Scott AJ, McIntosh WD. Mindful eating and ıts relationship to body mass ındex and physical activity among university students. Mindfulness 2013;4(3):269-74.
39. Durukan A, Gul A. Mindful eating: Differences of generations and relationship of mindful eating with BMI. Int J Gastron Food S 2019;18.
40. Anderson LM, Reilly EE, Schaumberg K, Dmochowski S, Anderson DA. Contributions of mindful eating, intuitive eating, and restraint to BMI, disordered eating, and meal consumption in college students. Eat Weight Disord-St 2016;21(1):83-90.
41. Anderson ME. Mindful eating: a guide to rediscovering a healthy and joyful relationship with food. Eat Disord 2012;20(3):249-51.
42. Basir SMA, Manaf ZA, Ahmad M, Kadir NBA, Ismail WNK, Ludin AFM, et al. Reliability and validity of the malay mindful eating questionnaire (MEQ-M) among overweight and obese adults. Int J Env Res Pub He 2021;18(3).
43. Oral N, ahin NH. Yeme tutum bozukluğunun kişilerarası şemalar, bağlanma, kişilerarası ilişki tarzları ve öfke ile ilişkisi. Türk Psikoloji Dergisi 2008;23(62):3748.
44. Özkan N, Bilici S. Are anthropometric measurements an indicator of intuitive and mindful eating? Eat Weight Disord-St 2020;26(2):639-48.
45. Sagui-Henson SJ, Radin RM, et al. Dismantling the link between daily negative mood and craving-induced eating: effects of a mobile mindful eating intervention. Ann Behav Med 2019;53:S357-S.
46. Santamaria AR, Vazquez IA, Caballero DP, Rodriguez CF. Eating habits and attitudes and their relationship with Body Mass Index (BMI). Eur J Psychiat 2009;23(4):214-24.
47. Gravel K, Deslauriers A, Watiez M, Dumont M, Bouchard AAD, Provencher V. Sensory-based nutrition pilot intervention for women. J Acad Nutr Diet 2014;114(1):99-106.
48. Gravel K, St-Hilaire GO, Deslauriers A, et al. Effect of sensory-based intervention on the increased use of food-related descriptive terms among restrained eaters. Food Qual Prefer 2014;32:271-6.
49. Köse, G. Can mindful eating help us when we struggle with eating? Mindful eating replaces diets. Türk Spor ve Egzersiz Dergisi 2020;22(1):72-7.

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