

ORIGINAL

Collective Health

Editor

Carla Cristina Enes

Data Availability

The research data are available from the corresponding author upon reasonable request.

Conflict of interest

The authors declare that there are no conflicts of interest.

Received

August, 1st 2024

Final version

June 12, 2025

Approved

August 28, 2025

Development and validation of the Scale of the Tendency Toward the Flexitarian Diet

Desenvolvimento e validação da Escala de Tendência à Dieta Flexitariana

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How to cite this article: Bayindir Gümüş A, Eşer Durmaz S, Açıık M, Öztürk E. Development and validation of the Scale of the Tendency Toward the Flexitarian Diet. Rev Nutr. 2025;38:e240120. <https://doi.org/10.1590/1678-9865202538e240120>

ABSTRACT

Objective

This study aimed to develop the Scale of the Tendency Towards the Flexitarian Diet (STFLEX) to measure the leaning towards the flexitarian diet.

Methods

The researchers created a 31-draft scale. Two items with lower content validity ratios were excluded from the scale. A 29-item draft was submitted through an online survey for data collection. Healthy adult volunteers attended from different Internet websites in Türkiye. Scale items measuring individuals' predisposition to follow a flexitarian diet. The items were evaluated with content validity following the Lawshe method. Confirmatory factor analyses were conducted to test construct validity. The Cronbach's alpha coefficient was calculated for reliability.

Results

Based on the validation analyses, no item was excluded from the item whole. Because of the factor analysis, the scale was divided into four subdimensions (economic reasons, macro-environment, environmental sustainability, and meat consumption). The developed STFLEX showed good compliance statistics, as established with the confirmatory factor analysis fit indices ($\chi^2/df = 1.593$, CFI = 0.967, TLI = 0.960, NFI = 0.916, RMSEA = 0.053), and high reliability (Cronbach's $\alpha = 0.958$).

Conclusion

The STFLEX is a reliable and valid tool for measuring the tendency toward the flexitarian diet, and it can be used in studies.

Keywords: Diet, plant-based. Dietary patterns. Reliability and validity. Sustainable eating. Vegetarian diet.

RESUMO

Objetivo

Este estudo teve como objetivo desenvolver a Escala de Tendência para a Dieta Flexitariana (ETPDF) para medir a inclinação para a dieta flexitariana.



Métodos

Os pesquisadores criaram uma escala de trinta e um rascunhos. Dois itens com menores índices de validade de conteúdo foram excluídos da escala. Um rascunho de vinte e nove itens foi aplicado por meio de uma pesquisa online para coleta de dados. Os voluntários adultos saudáveis compareceram de diferentes sites da Internet na Turquia. Itens da escala medindo a predisposição dos indivíduos a seguir uma dieta flexitariana. Os itens foram avaliados com validade de conteúdo seguindo o método Lawshe. As análises fatoriais confirmatórias foram conduzidas para testar a validade do construto. O coeficiente alfa de Cronbach foi calculado para confiabilidade.

Resultados

Com base nas análises de validação, nenhum item foi excluído do conjunto de itens. Como resultado da análise fatorial, a escala foi dividida em quatro subdimensões (razões econômicas, macroambiente, sustentabilidade ambiental e consumo de carne). O STFLEX desenvolvido mostrou boas estatísticas de conformidade, conforme estabelecido com os índices de ajuste da análise fatorial confirmatória ($\chi^2/df = 1,593$, CFI = 0,967, TLI = 0,960, NFI = 0,916, RMSEA = 0,053), alta confiabilidade (α de Cronbach = 0,958).

Conclusão

O STFLEX mostra-se uma ferramenta confiável e válida para mensurar a tendência à dieta flexitariana e pode ser utilizado em estudos.

Palavras-chave: Dieta baseada em plantas. Padrões dietéticos. Confiabilidade e validade. Alimentação sustentável. Dieta vegetariana.

INTRODUCTION

Determining the negative aspects of meat consumption on human health has been a debated area from the past to the present [1]. Data obtained from meta-analyses of epidemiological studies indicate that long-term meat consumption, particularly processed meat, is associated with an increased risk of total mortality and Non-Communicable Diseases (NCDs), including cardiovascular disease, colorectal cancer, and type 2 diabetes, in both genders [2]. At the same time, low fruit and vegetable intake is often characterized by the Western diet, which is associated with these health problems [3]. In addition, current evidence shows that reducing meat consumption in human nutrition provides good outcomes in terms of animal welfare environmental health and human health [4,5]. For this reason, today's diet types that eliminate animal-based meat consumption and include more plant-based foods have emerged. However, it is not easy to eliminate animal-based meat from vegetarian diets [4,5]. Therefore, "flexitarian diets" have been revealed as an alternative that does not eliminate but reduces animal meat consumption and that people adapt to more easily [6]. The term "flexitarian" has recently emerged in scientific and social circles and was included in the Oxford English Dictionary in 2014. It is a combination of the words "flexible" and "vegetarian" [7].

A conscious attempt to reduce meat consumption for a variety of reasons, such as weight loss, being healthier, and the protection of nature is a definition of a flexitarian diet. Eating meat at most once every 15 days, limiting total meat consumption to 1-4 times per month, indicates a tendency towards this type of diet [5,8]. There are many definitions of flexitarian diets, which are generally based on reducing meat consumption (especially red meat and processed meat), and studies have compared different flexitarian diets. Accordingly, flexitarian diets do not have strict rules and prohibitions [9,10]. Thus, it becomes difficult to compare and interpret the study results with each other and to know the number of flexitarians.

However, the number of consumers adopting flexitarian diets who avoid or limit regular meat consumption has been rising recently [11,12]. Flexitarians became the largest dietary group after omnivores, and they reduced the consumption of other animal-based foods along with meat. Thus, they play an important role in preventing climate change at the same time [13]. A flexitarian diet is expected to help solve food-related environmental sustainability and human health problems [8].

Reports have shown that the prevalence of flexitarians ranged from around or above 30% in Belgium to 40% or more in Netherlands, depending on the data source and definition of flexitarians [14]. According to the 2019 Food Standards Agency report, the consumption of animal meat has continued to decline, driven by concerns related to health, climate change, animal welfare, food safety, and economic factors. It is important to note, however, that fish was not included in the definition of reduced meat consumption [15]. The prevalence of flexitarians in the United States is 20% to 30% of the population [16]. To date, no scientific data have been found on the number of flexitarians in Türkiye. However, the results obtained from the world countries, studies can be observed over a wide range. One of the biggest problems in estimating the size of this consumer group is the broad lack of a wide consensus on a definition of the flexitarian diet [13]. Therefore, it is important to raise awareness regarding flexitarian diets and measure the tendency toward this type of diet. In addition, while the literature focuses on studies investigating other types of vegetarian diets, studies on flexible diets are limited, and not an instrument has been found to measure the tendency toward flexitarian diets. For this reason, the current study aimed to develop a scale to measure the tendency toward the flexitarian diet (STFLEX). Therefore, the tendency toward the flexitarian diet and its reasons will be measurable.

METHODS

This study was conducted in accordance with the principles of the Declaration of Helsinki and was approved by the Non-Interventional Research Ethics Committee of Kırıkkale University (2023.09.12/27/09/2023). Participants filled out an informed consent form in the online questionnaire and were able to withdraw from participation at any time without providing a reason.

The sample size should be five to ten times the number of draft scale items in scale development studies [17]. Accordingly, this study intended to include at least 145 participants given that 29 items in the item whole of “the scale of the tendency toward the flexitarian diet” developed in this study. The study was conducted between October and November 2023, and 217 adults were reached via social media platforms. Five of them did not agree to participate in the study, and data from 212 were analyzed. The study inclusion criteria were being a volunteer, a Turkish native speaker, having an Internet connection, being between 20 and 64 years old, being literate, not having any diagnosed diseases, not eating vegetarian diets, not being pregnant or lactated, and not being a student or graduate of Nutrition and Dietetics. Advanced knowledge about nutrition could lead to the emergence of eating behaviors toward reducing meat consumption. Medical nutrition treatments for chronic diseases may limit meat consumption. Being pregnant or breastfeeding requires special nutritional needs and may require situations that reduce or increase meat consumption in the diet. Those who eat any type of vegetarian diet have eliminated one or more types of meat. Thus, all factors that may have affected the tendency toward the flexitarian diet were eliminated from the study.

This study was announced on online platforms via social media (e.g., Facebook, Instagram) by the researchers. Participants in this study were invited to fill out the online questionnaire using the snowball sampling method to guarantee a large-scale distribution and recruitment. The data was obtained through an online questionnaire form created in Google Forms consisting of the scale and questions. The first part of the online form consisted of a scale indicating the tendency towards the flexitarian diet created by the researchers. The second part of the online form consisted of general characteristics (gender, age, education status, working status, marital status, professions, residence place, economic income level), last measured body weight and height according to their declaration, and exercise status. This online questionnaire took approximately 10-15 minutes to complete.

Descriptive data obtained from the study are presented as mean±standard deviation, and nominal data are presented as number and percentage (%). The data obtained from the study were evaluated using the statistical software package IBM®SPSS® Statistics for Windows v. 23.0 [18]. The Confirmatory Factor Analysis method used to analyze the subdimensions of the scale was conducted with AMOS 23.0 [19]. The statistical significance level was set as $p<0.05$.

A literature review was conducted to identify the tendency toward the flexitarian diet scale's item whole [5,8,9]. The draft scale form consisting of 31 items was presented to 10 experts studying Nutrition and Dietetics, having at least five years of experience and at a minimum of PhD level, with three options including "Appropriate", "Appropriate but should be reviewed" and "Not Appropriate" by considering Lawshe's method. Item-total correlations were also investigated. The related item was excluded from the scale if the item-total correlation was less than 0.25.

The theoretical structure of the scale consisted of four factors: Factor 1 (F1-economic reasons), Factor 2 (F2-macro-environment), Factor 3 (F3-environmental sustainability), and Factor 4 (F4-meat consumption - health concerns). To test this theoretical structure and construct validity, an Explanatory Factor Analysis (EFA) with equamax rotation was conducted. The analysis results revealed that F1, F2, and F3 were compatible with the structure, and F4 was divided into three separate subdimensions. However, due to detailed examinations by researchers, it was not deemed appropriate to divide this factor. Confirmatory factor analysis of the four-factor structure.

An internal consistency analysis was performed to determine the scale's reliability. Cronbach's alpha coefficient was observed, and values between 0.80 and 1.00 were accepted as highly reliable for Cronbach's alpha. Thus, the Spearman-Brown coefficient was evaluated.

RESULTS

A total of 212 healthy adults (27.8% male and 72.2% female, with a mean age of 31.8 years) participated in this study. Many of them were bachelor's degrees (67.0%), active workers (65.1%), were single (55.7%), were urban residents (89.2%), had a balanced income (51.9%), and did not speak flexitarian diet (93.9%) but predicted the flexitarian diet's definition truly (68.4%) (Table 1).

Table 1 – Participants' general information.

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Characteristics	Mean	Standard Deviation
Age (years)	31.8	9.9
Characteristics	Number	Percentage
Gender		
Male	59	27.8
Female	153	72.2
Education status		
Primary/elementary school	9	4.3
High school	13	6.1
Bachelor	142	67.0
Postgraduate	48	22.6
Working status		
Yes	138	65.1
No	74	34.9
Profession		
Health employee	45	21.2
Other officials	55	25.9

Table 1 – Participants' general information.

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Characteristics	Mean	Standard Deviation
Age (years)	31.8	9.9
Characteristics	Number	Percentage
Non-working woman	18	8.5
Self-employment	11	5.3
Worker	10	4.7
Student	42	19.8
Private sector worker	31	14.6
Marital status		
Married	94	44.3
Single	118	55.7
Living place		
Urban	189	89.2
Rural	23	10.8
Economic status		
Lower income	67	31.6
Balanced income	110	51.9
Higher income	35	16.5
Budget allocated for nutrition		
<25% of total income	96	45.3
25-50% of total income	91	42.9
50-75% of total income	23	10.8
>75% of total income	2	1.0
Regular exercise		
Yes	41	19.3
No	171	80.7
Heard of the flexitarian diet before		
Yes	13	6.1
No	199	93.9
Definition of the flexitarian diet		
True	145	68.4
False	67	31.6

Two items with content validity ratios lower than 0.62 were excluded from the scale. Therefore, 29 items remained, and the content validity indexes of 29 items were analyzed. The content validity index was found to be 0.828, which is greater than 0.67 and satisfies the content validity of the scale. Ten interviews were conducted for pre-testing questions for feedback on the intelligibility of the scale's final version.

Participants had five options for each item: "always", "often", "sometimes", "rarely", and "never" and a five-point Likert-type scale was used to express the level of participation of the items. Item analyses were conducted, and correlations between the scores for each item of the scale and the total scale score were calculated. When the item-total correlations in Table 2 were examined, it was observed that the correlations were positive and between 0.392 and 0.840. No item was excluded from the scale because no item had corrected item-total correlation values lower than 0.25.

Explanatory factor analysis was performed for structure validity with equamax rotation and principal component analysis as factor extraction. The Kaiser–Meyer–Olkin Measure value (0.934) and Bartlett's test result ($\chi^2 (153) = 6124.039; p < 0.001$) showed that the sample and correlation matrix of the scale were appropriate for factor analysis.

Table 2 – The Scale of Tendency toward the Flexitarian Diet item analyses outcomes.

Item n°	Items	Item total
I1	Since meat and its products are more expensive than other foods, I reduce eating meat.	0.489
I2	Since red meat is more expensive than other types of meat, I consume less of it.	0.514
I3	When I cannot afford to buy meat and meat products, I reduce eating meat.	0.459
I4	When my budget is not enough, I eat other foods I can afford instead of meat.	0.420
I5	I try to eat less meat because I consider consuming too much meat to be unhealthy.	0.775
I6	I try to eat less meat because I consider I will be healthier.	0.748
I7	I try to eat less meat because I consider that excessive meat consumption is the cause of some diseases.	0.773
I8	To lose weight, I try to eat less meat.	0.742
I9	When people around me eat less meat, I also try to eat less meat.	0.737
I10	When I hear/read that excessive meat consumption is unhealthy, I try to eat less meat.	0.738
I11	When I see people around me eat less meat in social environments such as family dinners/friend gatherings/workplace meals, I try to eat less meat.	0.740
I12	I try to eat less meat because I consider meat production harms the environment more than other foods.	0.826
I13	I try to eat less meat because I consider meat production has a greater impact on carbon emissions (produces more greenhouse gases harmful to nature) than other foods.	0.828
I14	I try to eat less meat because I consider more water is used and polluted in meat production than other foods.	0.813
I15	I try to eat less meat because I consider I benefit nature.	0.838
I16	I try to eat less meat because I consider it is not right to end the lives of other living creatures to feed people.	0.801
I17	Since I do not think that it is right to include animal meat in people's diets, I try to eat less meat.	0.817
I18	I try to eat less meat because I believe that animals should have the freedom to live like humans and that they are not food.	0.840
I19	Regardless of economic or other reasons, I try to reduce the frequency of red meat consumption.	0.655
I20	Regardless of economic or other reasons, I try to reduce the frequency of processed meat consumption (sucuk, salami, sausage, etc.).	0.434
I21	Regardless of economic or other reasons, I try to reduce the frequency of poultry meat consumption (chicken, turkey, etc.).	0.566
I22	Regardless of economic or other reasons, I try to reduce the frequency of fish and other animal seafood consumption.	0.537
I23	Regardless of economic or other reasons, I try to eat red meat and poultry (chicken, turkey, etc.) at most once a week.	0.392
I24	Regardless of economic or other reasons, I try to eat fish and other animal seafood once a week or less frequently.	0.468
I25	Regardless of economic or other reasons, I take care of eating meat at most once a fortnight.	0.453
I26	Regardless of economic or other reasons, I try to reduce the amount of meat and meat products I consume in one sitting.	0.690
I27	Regardless of economic and other reasons, I prefer to eat other types of meat (such as poultry meat, and fish) instead of red meat.	0.613
I28	Regardless of economic or other reasons, I try to limit the frequency of meat consumption to between once and four times a month.	0.710
I29	Regardless of economic or other reasons, it is easier to reduce meat consumption than to never eat meat.	0.514

Note: I: Item.

Confirmatory factor analysis was performed using data from 212 participants. Necessary modifications were made to improve the model-data harmony by reducing the χ^2 value in the analysis process using the maximum likelihood estimation method [20]. Figure 1 shows the path diagram of the four-factor theoretical structure model (F1: economic reasons, F2: macro-environment, F3: environmental sustainability, F4: meat consumption ~ health concerns).

When the standardized factor loadings and error variances were examined for the model, the factor loadings ranged from 0.464 to 0.951. Table 3 presents the standardized factor loadings (CFA), *t* values, and *p* values of the items calculated for the theoretical model.

The fit indices χ^2/df , the Normed Fit Index (NFI), the Tucker-Lewis Index/Non-Normed Fit Index (TLI/NNFI), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA) were used as a result of the confirmatory factor analysis. In examining the scale values according to the criteria in Table 4, χ^2/df (1.593), NFI (0.916), TLI (0.960), CFI (0.967), and RMSEA (0.053) indicated the acceptable-fitting model level [21-23].

The Cronbach's alpha reliability coefficient was calculated to determine to what extent the scores, obtained from the second administration of the tendency towards the flexitarian diet developed in the context of the study, could distinguish participants in terms of tendency.

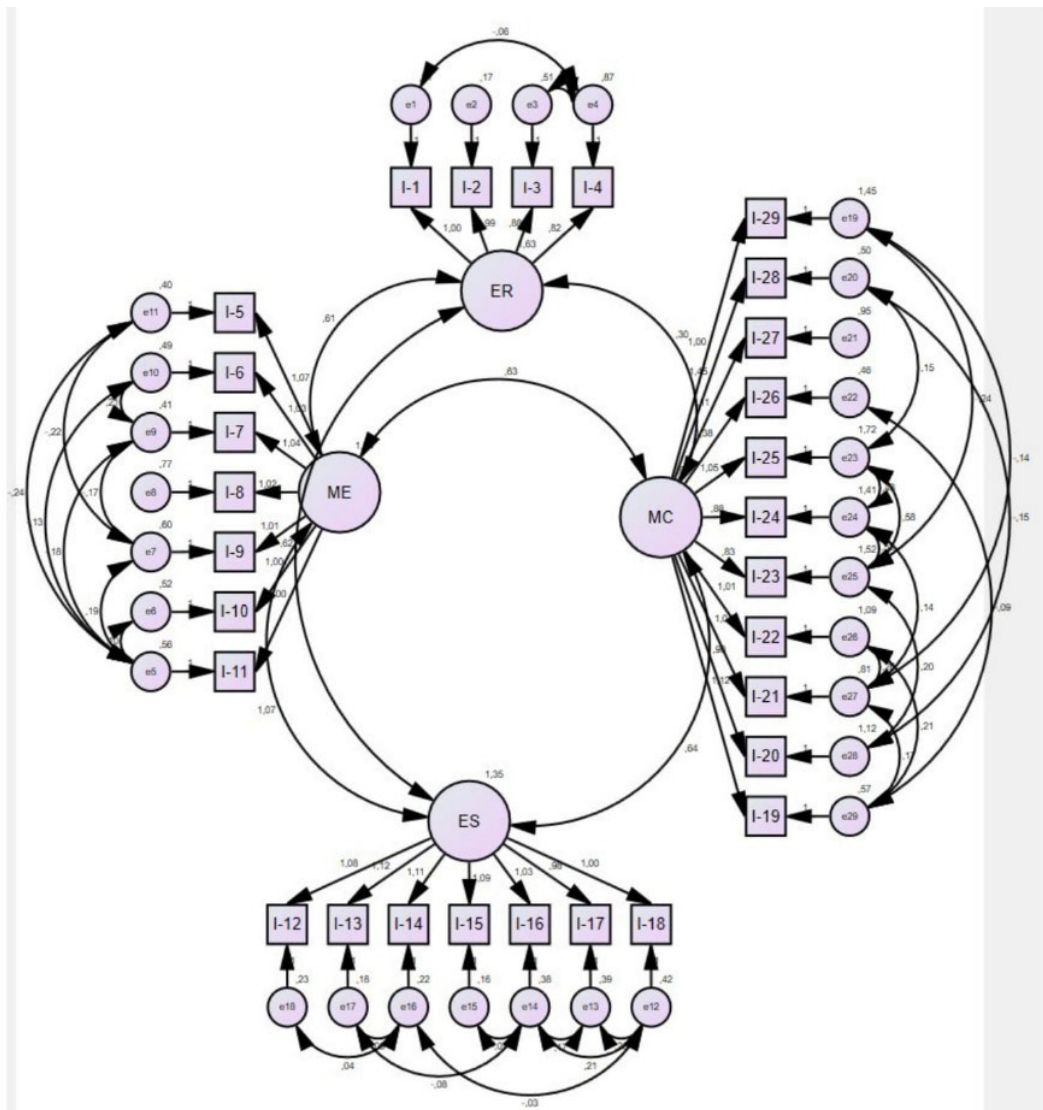


Figure 1 – Standardized path coefficients of model.

Note: The coefficients of 29 items are shown. ER: Economic Reasons; ES: Environmental Sustainability; I: Items; MC: Meat Consumption; ME: Macro-Environment.

Table 3 – Participants’ the Scale of Tendency toward the Flexitarian Diet scores.

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Items	Standardized loadings	<i>t</i>	<i>p</i>
I-1	0.941		
I-2	0.951	25.62	<0.001
I-3	0.844	18.966	<0.001
I-4	0.747	13.726	<0.001
I-11	0.831	-	-
I-10	0.841	16.043	<0.001
I-9	0.822	16.931	<0.001
I-8	0.793	13.2	<0.001
I-7	0.874	13.342	<0.001
I-6	0.853	13.446	<0.001
I-5	0.884	13.032	<0.001

Table 3 – Participants' the Scale of Tendency toward the Flexitarian Diet scores.

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Items	Standardized loadings	t	p
I-18	0.874	-	-
I-17	0.878	31.145	<0.001
I-16	0.891	27.064	<0.001
I-15	0.953	22.129	<0.001
I-14	0.941	20.344	<0.001
I-13	0.95	21.919	<0.001
I-12	0.934	21.048	<0.001
I-29	0.544	-	-
I-28	0.847	8.294	<0.001
I-27	0.665	7.272	<0.001
I-26	0.848	8.287	<0.001
I-25	0.531	6.221	<0.001
I-24	0.501	5.995	<0.001
I-23	0.464	5.244	<0.001
I-22	0.605	6.812	<0.001
I-21	0.672	6.88	<0.001
I-20	0.553	6.391	<0.001
I-19	0.758	7.781	<0.001

Note: I: Item.

Table 4 – Compliance statistics of the Scale of Tendency toward the Flexitarian Diet.

Compliance indices	Criteria	Tendency to Flexitarian Diet Scale
χ^2/df	≤ 2 or 3	1.593
NFI	0.90-0.95	0.916
TLI (NNFI)	≥ 0.95 can be $0 > TLI > 1$	0.90
CFI	≥ 0.95	0.967
RMSEA	< 0.06	0.053

Note: CFI: comparative Fit Index; NFI: Normed Fit Index; RMSEA: Root Mean Square Error of Approximation; TLI/NNFI: Tucker-Lewis Index/ Non-Normed Fit Index.

The coefficient of the scale was 0.958. The coefficients of F1, F2, F3, and F4 were 0.932, 0.941, 0.976, and 0.888, respectively. The fact that the Cronbach's alpha coefficient is greater than 0.80 indicates that the scale is highly reliable (24). The Spearman-Brown correlation coefficient was found 0.869, indicating a high correlation between the two parts of the scale. Therefore, high reliability was obtained using this coefficient.

The Tendency toward the Flexitarian Diet Scale consisting of four subscales and 29 items are evaluated using a five-point Likert scale. Each item is evaluated as 'always' – five points, 'often' – four points, 'sometimes' – three points, 'rarely' – two points, and 'never' – one point. There is no reverse-coded substance. The total score can be calculated. Thus, a minimum of 29 and a maximum of 145 points from the scale can be taken as a total. 4-20, 7-35, 7-35, and 11-55 points can be taken from F1, F2, F3, and F4, respectively (Figure 2). The increase in the respondent's scale score indicates a high tendency toward the flexitarian diet.

DISCUSSION

In this current study, most participants expressed that they had not heard of the flexitarian diet concept, but over half of them could predict the flexitarian diet definition from the options.

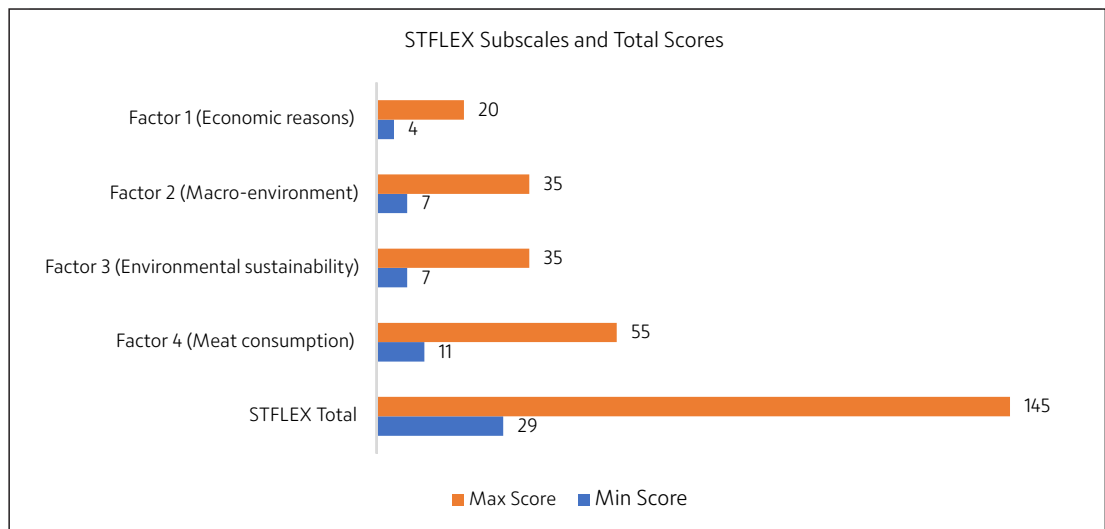


Figure 2 – STFLEX score chart

Note: STFLEX score ranges from 29 to 145 points. The subscales' score ranges are 4-20, 7-35, 7-35, and 11-55 points, respectively.

This result shows that individuals can assume the words “flexitarian” or “flexitarianism” by thinking about their origins even if they have not heard of them.

Cronbach's alpha coefficients were greater than 0.80, indicating that the scale is highly reliable [24]. The study's major results were good compliance statistics and high Cronbach's α (0.958). Because this study conducted to measure the tendency toward the flexitarian diet, a valid and reliable measurement tool has emerged. The results indicate that the scale is reliable and can be used in scientific studies. To our knowledge, this scale is the first tool in the literature to measure the tendency toward the flexitarian diet. The study has contributed to the literature as a pioneer and guide for future studies. It may be useful to identify individuals who tend to have a flexitarian diet in societies and to determine the rates. It can be adapted and used in other languages.

Meat has played an important role in the human diet since ancient times because it contains several micronutrients, including zinc, iron, vitamin B12, and all essential amino acids, making it an excellent protein source [25,26]. On the other hand, the fat content and fatty acid profile of meat is a constant matter of concern [26], and high Saturated Fatty Acids (SFAs) consumption Causes Non-Communicable Diseases (NCDs), especially SFAs, which can cause cardiovascular disease development [27]. In addition, meat has an excessive ecological footprint compared with plant-based foods, and it is also associated with adverse health effects [28,29].

Scientific evidence has shown that high meat consumption has significant negative impacts on both human health and the environment in terms of water use, land pollution, and greenhouse gas emissions [28,30,31]. For this reason, meat consumption has become a controversial and current topic in public debates; additionally, it involves multiple sustainability dimensions [29]. Therefore, meat consumption reduction, especially in the Western diet, is needed [31], and that limited meat consumption in the diet has important implications for public health, animal welfare, and planetary health [32]. However, meat is still a cornerstone of many people's diets [33], and excluding completely animal meat from the diet is not easy for many people [4,5], and some consumers are unwilling to cut down on meat consumption [33].

For these reasons, people are more likely to reduce meat consumption rather than eliminate it from their diet; therefore, interest in flexitarian diets has increased [32]. Flexitarian diets have

been related to reducing meat consumption to the recommended healthy levels, not being a full vegetarian or a meat eater, and being receptive to limiting meat consumption by abstaining from eating meat occasionally [8,32,34]. At the same time, flexitarianism has a couple of definitions as well, involving part-time vegetarianism, reduction in individual meat consumption to the recommended healthy dietary guidelines, semi-vegetarian diet, and limiting meat consumption in the diet [8,9,34].

According to a study of diets around the world, only about 5% of the world's population described themselves as vegetarians, while many more people (between 14-61%) described themselves as flexitarians (reducing their meat consumption) [35]. Despite the recent increase in flexitarianism [8], investigations on this topic remain relatively limited [31]. In particular, young adults are turning to a flexitarian diet, yet little research exists on this crucial consumer group [32]. In addition, the variability in the frequency of flexitarianism in studies makes it difficult to reach a consensus on this issue and make future comments. Therefore, this study aimed to develop a scale to measure the tendency towards the flexitarian diet in a standardized and simple way.

One of the important outcomes of this study was the measurement of flexitarian dietary tendencies using four subdimensions. There are a variety of reasons why people tend to increase plant-based food consumption and follow a flexitarian diet, including ecological, environmental, ethical, health, price, socioeconomic, and reducing social unease [32,36]. The underlying reasons for an individual's preference or tendency to follow the flexitarian diet are substantial. Therefore, the scale items were divided into four comprehensive dimensions. These dimensions measure economic reasons, macro environment, environmental sustainability, and meat consumption.

Economic reasons might be a major barrier to consuming meat today, especially in developing countries, with the increase in meat prices. In addition, socioeconomic status can influence the role of price on food choices [37]. The macro-environment represents the effects of the media, nutrition policies, and sociocultural norms (external factors). The meat consumption subdimension shows that individuals are inclined toward a flexitarian diet, usually due to health concerns, for reasons other than economic, macroenvironment, and sustainability factors. In this way, the tendency towards the flexitarian diet can be measurable for all its reasons.

This scale development study has some strengths and limitations. The current study is the first survey to examine and measure the tendency towards the flexitarian diet in healthy adults using a scale. This study offers the opportunity to determine people's flexitarian diet predisposition that is standardizable beyond the complex literature definition of a flexitarian diet. Additionally, the expressions in the scale items, including the reasons for the tendency toward the flexitarian diet, indicate that this current study, although cross-sectional in nature, also reveals causality.

This study has also known survey research limitations. Respondents could attend this study from the whole of Türkiye. Secondly, the participants were recruited using an online survey form. The popularity and ease of online surveys are used today to save time and reach more people. However, the Internet may be a fruitful area for conducting survey research. Some areas, including health, have been studied using online surveys. In addition, time and cost issues are advantages of conducting online surveys [38]. Furthermore, some evidence shows that web-based surveys are more reliable or more advantageous than face-to-face surveys and other survey methods [39]. Thus, appropriately prepared online surveys can be used reliably in scientific studies if enough samples are included, and the specified number of participants is reached. In this way, it is thought that using this method instead of the method in which respondents without an interviewer's assistance (or bias) is not a major limitation. On the other hand, possible limitations of online surveys, such as low

motivation to participate/return rate/quality responses, internet access problems, technological problems, repeated participation, potential exclusion of less digitally connected populations should also be considered for further studies.

CONCLUSION

The current study indicates that the scale of the tendency towards the flexitarian diet (STFLEX) is a valid and reliable tool for measuring people's tendency towards the flexitarian diet. It is important to have a standard measurement tool to avoid confusion in the literature on this topic. In addition, the reason for the tendency towards the flexitarian diet is more important today. Concerns about sustainability and environmental health are among the main factors besides health. Revealing the tendency towards the flexitarian diet and the reason for this tendency allows us to obtain more detailed information about these individuals in society.

As a result, the scale's four-dimensional structure is suitable for measuring people's tendency to eat the flexitarian diet. It is hoped STFLEX will contribute to studies aimed at measuring the tendency towards the flexitarian diet, which is becoming increasingly popular, especially among young people worldwide.

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ACKNOWLEDGMENTS

Authors thank to all participants for their valuable time.

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