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Validity and Reliability of the Turkish Version of the NutriSTEP Questionnaire

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ABSTRACT

Objective: This study aims to evaluate the validity and reliability of the Nutrition Screening Tool for Every Preschooler (NutriSTEP) questionnaire in Turkish, a measurement tool originating from Canada that is designed to assess the nutrition risk of preschool children.
Materials and Methods: An online cross-cultural validation study was conducted with 196 parents of children aged 3-5 years in Istanbul, Türkiye. The NutriSTEP questionnaire is comprised of 17 items covering four categories and underwent translation into Turkish and subsequent evaluation for language, content, and face validity. Data collection occurred online, with statistical analyses being performed to gauge the reliability and validity of the tool.
Results: A total of 196 parents participated in the study who yielded a mean NutriSTEP score of 27.30 ± 6.64, indicating a notable prevalence of medium to high nutrition risk among preschoolers. The content validity index was assessed at 0.99, underscoring the robustness of the tool's content validity. The item-scale correlation analysis revealed a significant and consistent correlation between each item and the total score, affirming the coherence of the items within the NutriSTEP scale. Further scrutiny through item analysis unveiled predominantly positive correlations between most items and the total score, further bolstering the tool's efficacy at gauging nutrition risk. A criterion-related validity analysis highlighted significant associations between NutriSTEP scores and various factors, illuminating the tool's predictive capacity concerning nutrition risk. Moreover, the test-retest analysis demonstrated a robust correlation between the initial and repeated administrations of NutriSTEP ($p < 0.01$), reaffirming its reliability over time.
Conclusion: In conclusion, the Turkish adaptation of NutriSTEP demonstrates strong validity and reliability for assessing nutrition risk among preschool children, making it a suitable tool for use in Türkiye. Its user-friendly nature that allows parents to complete the assessment swiftly in approximately 10 minutes provides valuable insights into various aspects of children's nutritional status.
Keywords: Children, preschoolers, nutrition screening, nutrition risk, parent

INTRODUCTION

Nutrition plays a crucial role in supporting optimal growth and development. When mismanaged, nutrition can result in both short-term and long-term health issues, including chronic diseases such as diabetes and heart conditions, as well as such problems as obesity, wasting, stunting, and iron deficiency in growing children (1). Identifying children at risk of malnutrition early on is essential for preventing childhood malnutrition. Nutrition risk encompasses a spectrum of conditions, ranging from malnutrition to overnutrition (2). Nutritional risk screening aims to identify the characteristics that may contribute to a decline in nutritional status at an early stage before it gets exacerbated (3). The objective is to pinpoint individuals at risk of symptomatic or asymptomatic feeding issues (4). Given that eating habits established in childhood shape nutritional behaviors in adulthood, instilling healthy eating habits from an early age is imperative (5,6). Nutrition screening serves to raise awareness about potential nutritional issues. However, the literature has yet to identify a straightforward tool for screening nutrition risk that parents can readily utilize and apply to all stages of early childhood in Türkiye. Implementing effective screening systems during early childhood can effectively prevent significant nutritional issues

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by identifying children at risk of undernutrition early on. Early detection of existing nutritional issues reduces the burden and associated costs, facilitating timely interventions.

The Nutrition Screening Tool for Every Preschooler (NutriSTEP) questionnaire is a 17-item measurement tool developed in Canada for assessing nutrition risk and is completed by parents (4). While several pediatric nutrition risk screening scales have been developed for preschoolers, most are suitable for employment in acute/hospital settings. NutriSTEP, however, is suitable for use in preschools, routine healthy child check-ups, and hospital settings. Its primary advantages include its simplicity and user-friendliness, allowing parents and caregivers to complete it quickly in around 10 minutes (7). NutriSTEP facilitates early identification of potential nutrition problems, can be administered online and in various settings, and is practical (1,8). Providing nutrition education to families whose children's nutritional status is assessed using a reliable tool is believed to be able to affect the child's nutritional status and risk factors.

Research Question

Is the translated Turkish version of NutriSTEP a valid and reliable tool?

MATERIALS AND METHODS

Aim

This study aims to evaluate the validity and reliability of the Turkish version of NutriSTEP, which was originally developed in English in Canada.

Participants

The study enrolled parents of children aged 3-5 years with access to the Internet and a smartphone, tablet, or computer between March 2021-July 2021. It was conducted in 10 voluntarily participating preschools in Istanbul, Türkiye. The preschools were selected based on their geographical location to ensure equitable access to the Internet and food, as per the Ministry of Industry and Technology study (9). These districts were categorized into six levels based on various socioeconomic development indicators: demography, employment, social security, education, health, finance, competitiveness, innovation, and quality of life.

Sample

The sample size comprises the parents who met the inclusion criteria and agreed to participate. To ensure the adequacy of the factor analysis, which suggests a sample size of 5-10 times the number of items on a scale, a minimum of 170 parents (ten times the number of items on the 17-item scale) were planned for inclusion (10). Accordingly, a total of 196 parents were included. The inclusion criteria require the parents to have a child aged 3-5 years; proficiency in the Turkish language; access to an Internet connection and a smartphone, tablet, or computer; and no chronic diseases or disabilities affecting their child's nutrition. Teachers indiscriminately provided eligible parents information about the study.

Instruments

The researchers developed an information form comprised of 16 questions to gather sociodemographic data about the children and their families.

The NutriSTEP questionnaire is a concise tool developed by Simpson et al. (4) in Canada that screens eating habits, identifies nutritional problems, and assesses nutrition risk in children. Originally developed in English and French, it has been translated into six other languages commonly spoken in Canada (Traditional Chinese, Simplified Chinese, Punjabi, Spanish, Tamil, and Vietnamese). Parents are able to complete NutriSTEP online by answering questions about their children's nutrition, physical characteristics, and activities. NutriSTEP consists of 17 questions categorized under four sections: food and fluid intake (Items 1-6, 9-10, 13), physical growth and development (Items 8, 16-17), physical activity and sedentary behavior (Items 14-15), and factors influencing food intake and nutritional behavior (e.g., food insecurity, nutritional environment; Items 7, 11-12). Each question offers 2-5 response options and is scored from 0 (no risk) to 4 (high risk). The total score is obtained by adding up the points from each question, with higher scores indicating greater nutrition risk. Possible scores range from 0-68, and based on NutriSTEP's cut-off points, scores of 20 or lower are considered low risk, between 21-25 as medium risk, and 26 or higher as high risk.

Procedure

Language validity

While translating NutriSTEP into Turkish, considerations were made to ensure appropriate sentence structures and cultural adaptation of nutritional behaviors. The researcher and two native Turkish translators each translated NutriSTEP into Turkish, with the most appropriate expressions being selected from among the three translations to create the Turkish version. The Turkish version was then back-translated into English by an English expert who is a native Turkish speaker with no access to the original English form. The back-translated version was compared to the original form, and necessary corrections were made to finalize the Turkish version. The final Turkish NutriSTEP version was sent to the original author for approval.

Content validity

Content validity was assessed to evaluate the conceptual clarity and cultural suitability of the translated NutriSTEP items. The Turkish version was reviewed by experts in pediatric nursing (12 associate professors & 11 professors) and dietetics (1 associate professor, 1 Master's degree, 2 bachelor's degrees) who are proficient in English. Experts evaluated each item conceptually and provided ratings on a scale of 1-4. Based on their opinions, the content validity index for the 17 items was found to be 0.99. The final version of NutriSTEP was developed by considering the experts' recommendations.

Face validity

As an initial evaluation, the items' intelligibility and the tool's usability were assessed by 10 parents in a pilot study. Any items that were not understood or that lacked clarity were identified and modified accordingly. Because no negative feedback was received, the data collected during the pilot study were not included in the final analysis.

Data Collection

After making the necessary corrections, the researchers selected 10 different private preschools in Istanbul from which to collect data and contacted the educators working in these institutions. In this communication phase, the educators were informed about the objectives of the study and instructed on how to use the NutriSTEP tool. Parents who were identified as potential participants were provided with an online questionnaire to complete the NutriSTEP assessment designed to measure their child's nutrition risk. Parental consent was obtained online. Parents then completed both the information form and the NutriSTEP tool online.

Test-retest analyses are typically conducted over a period of 2-6 weeks (average 4 weeks) to allow for short-term memory effects to fade, as well as for subject variability between tests. The present study waited four weeks before retesting (10–12), at which time the same cohort of participants was recontacted to assess the reliability of the data through a retest process. This time, the participants were contacted via the phone numbers they had provided and asked to complete the NutriSTEP assessment online for the retest phase (Figure 1).

Data Analysis

Data were analyzed using SPSS for Windows (Version 23.0). Descriptive statistics such as mean, standard deviation (*SD*), and frequency were used to summarize the data. NutriSTEP validation was assessed through language validity, content validity index, and criterion-related validity (predictive validity) analyses. Reliability testing used standard errors, item-total correlations, sub-dimension score correlations, scale response biases, and test-retest reliabilities. Because NutriSTEP is not a Likert-type or consistently ordered measurement tool, Cronbach's alpha was not calculated, not did the original study calculate any Cronbach's alpha.

Ethical Statement

The study received approval from the Ethics Committee of İstanbul University-Cerrahpaşa in Türkiye (IRB number 16.03.2021/53211), with additional permission being obtained from the preschools. Teachers informed parents about the study and obtained their consent online.

RESULTS

This study has found the children's mean age to be 3.94±0.85 years, with 66.8% being male and 53.6% having a normal body mass index (BMI). The mean ages of the mothers and fathers is 32.94 ± 5.14 years and 35.69 ± 5.12 years, respectively. The mean number of individuals living in the immediate family is 3.60 ± 0.87. Among the families, 54.6% have only one child, and 59.7% of the mothers and 54.6% of the fathers have bachelor's degrees. Additionally, 50.5% of the families have income equal to their expenses, while half of the mothers and 99% of the fathers are employed. Furthermore, 89.3% of the families have a nuclear family structure, with 51% having three individuals living in the family (Table 1).

The NutriSTEP scores and their descriptive statistics are presented in Table 2. The mean NutriSTEP score is 27.30 ±

Table 1. Distribution of descriptive characteristics of children (n=196)

Features	Mean	SD
Age of children (min-max: 3.00-5.50)	3.94	0.85
Age of mothers (min-max: 23.00-54.00)	32.94	5.14
Age of fathers (min-max: 27.00-55.00)	35.69	5.12
Features	**n**	**%**
Cinsiyet		
Female	65	33.2
Male	131	66.8
Body Mass Index (BMI)		
Weak (<5 percentile)	19	9.7
Normal weight (5-75 percentile)	105	53.6
Overweight (85-95 percentile)	45	23.0
Obesity (>95 percentile)	27	13.8
Number of children in families		
1	107	54.6
2 or more	89	45.4
Mothers' education		
Primary school	7	3.6
Middle School	14	7.1
High school	35	17.9
Bachelor	117	59.7
Postgraduate	23	11.7
Fathers' education		
Primary school	8	4.1
Middle School	7	3.6
High school	54	27.6
Bachelor	107	54.6
Postgraduate	20	10.2
Income Status		
Income less than expenses	34	17.3
Income equals expenses	99	50.5
Income more than expenses	63	32.1
Mothers' work status		
Yes	98	50.0
No	98	50.0
Fathers' work status		
Yes	194	99.0
No	2	1.0
Family type		
Nuclear family	175	89.3
Extended family	15	7.7
Single-parent family	6	3.1
Number of individuals living in the family		
*3.60±0.87 (min-max: 1.00-8.00)	100	51.0
3	96	49.0
4 or more		

*Arithmetic mean standard deviation.

6.64. The mean scores for the subdimensions are as follows: food and fluid intake is 18.21 ± 3.38, physical growth and development is 2.63 ± 2.93, physical activity and sedentary behavior is 2.79 ± 2.42, and factors influencing food intake and nutritional behavior is 3.65 ± 1.58. The mean scores for the NutriSTEP items range from 0.15-3.28 (Table 2).

Several tests were performed to determine the reliability of the Turkish version of NutriSTEP, including standard error, item-total and sub-dimension score correlation, test-retest, and scale response bias tests. The study also has evaluated the mean, standard error, and standard deviation values of the parents' answers to the 17 items on NutriSTEP (Table 2).

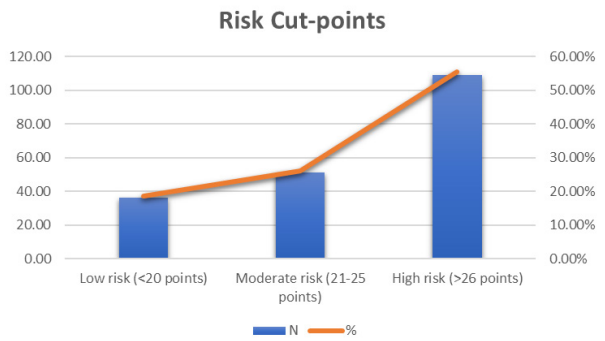
When considering the NutriSTEP risk assessment, 55.6% of the children have high nutrition risk, 26% have medium risk, and 18.4% have low risk (Figure 1).

Criterion-Related Validity (Predictive Validity)

To assess the predictive validity of NutriSTEP, BMI, income status, mother's employment status, and family type criteria were considered. A significant difference was found between the total NutriSTEP score and BMI. As the BMI increases or decreases, the average NutriSTEP score increases (χ^2 = 102.726, p < 0.001). A significant difference is also found between the total NutriSTEP score and income status. As income status increases, the mean NutriSTEP score decreases, indicating a lower nutritional risk status (F = 6.172, p = 0.005). Similarly, a significant difference was found between the total NutriSTEP score and mother's employment status, with working mothers having higher NutriSTEP scores compared to non-working mothers (t = 17.566, p < 0.001). In terms of family type, extended families have higher NutriSTEP mean scores compared to nuclear families (χ^2 = 14.579, p = 0.001; Table 3). However, no significant difference was found regarding NutriSTEP scores based on the parents' education levels.

Table 2. Distribution of mean scores of responses to NutriSTEP items (n=196)

NutriSTEP Items	Mean	SD
Item 1	3.28	0.97
Item 2	2.46	0.99
Item 3	2.57	0.57
Item 4	3.01	0.73
Item 5	1.99	0.85
Item 6	0.69	0.99
Item 7	0.16	0.37
Item 8	0.15	0.37
Item 9	1.05	0.86
Item 10	1.49	0.89
Item 11	1.30	0.96
Item 12	2.18	1.16
Item 13	1.64	1.37
Item 14	1.63	1.97
Item 15	1.16	1.07
Item 16	1.24	1.85
Item 17	1.22	1.82
Food and fluid intake (Items 1,2,3,4,5,6,9,10,13)	18.21	3.38
Physical growth and development (Items 8,16,17)	2.63	2.93
Physical activity and sedentary behavior (Items 14,15)	2.79	2.42
Factors affecting food intake and eating behavior (Items 7,11,12)	3.65	1.58
NutriSTEP Total	27.30	6.64



Graph 1. Distribution of NutriSTEP risk status (n=196)

Item Total and Sub-Dimension Score Correlation

Table 3. Comparison of NutriSTEP score with some descriptive characteristics of children and families (n=196)

Features	n	NutriSTEP Total	Test p
Body Mass Index (BMI)			
Weak (<5 percentile) (a)	19	34.63±4.99	
Normal (5-85 percentile) (b)	105	23.22±4.90	**x2:** 102.726
Overweight (85-95 percentile) (c)	45	29.26±4.08	**p<** 0.001*
Obesity (>95 percentile) (d)	27	34.74±4.35	a=d>c>b**
Income Status			
Income less than expenses (a)	34	30.41±6.75	**F:** 6.172
Income equals expenses (b)	99	27.34±6.69	**p=** 0.005*
Income more than expenses (c)	63	25.57±5.95	b=c<a***
Mother's working status			
Yes	98	32.50±4.70	**t:** 17.566
No	98	22.12±3.47	**p<** 0.001*
Family type			
Nuclear family (a)	175	26.66±6.48	**x2:** 14.579
Extended family (b)	15	32.13±4.54	**p=** 0.001*
Single-parent family (c)	6	33.83±8.13	a<b****

*p<0.05, χ^2: Kruskal Wallis test, F: One-Way ANOVA, t: Student t-test, ** Bonferroni-adjusted p-value p<0.008, ***Post hoc Tukey's-b test result, **** Bonferroni-adjusted p-value p<0.0167.

An item analysis has been performed to determine the internal consistency of NutriSTEP. The item sub-dimension score correlations range from 0.32-0.59 in the food and fluid intake sub-dimension, 0.29-0.77 in the physical growth and development sub-dimension, 0.60-0.90 in the physical activity and sedentary behavior sub-dimension, and 0.24-0.75 in the

Table 4. NutriSTEP item total and sub-dimension score correlations (n=196)

Sub-dimension	Items	Item Sub-Dimensional Score Correlations	P	Item Total Score Correlations	p
Food and fluid intake	Item 1	00.35	0.000*	0.13	0.053
	Item 2	00.46	0.000*	0.31	0.000*
	Item 3	00.32	0.000*	0.24	0.000*
	Item 4	00.40	0.000*	0.34	0.000*
	Item 5	00.38	0.000*	0.21	0.003*
	Item 6	0.38	0.000*	0.28	0.000*
	Item 9	0.36	0.000*	0.40	0.000*
	Item 10	0.59	0.000*	0.50	0.000*
	Item 13	0.39	0.000*	0.23	0.001*
Physical growth and development	Item 8	0.29	0.000*	0.26	0.000*
	Item 16	0.76	0.000*	0.53	0.000*
	Item 17	0.77	0.000*	0.53	0.000*
Physical activity and sedentary behavior	Item 14	0.90	0.000*	0.51	0.000*
	Item 15	0.60	0.000*	0.45	0.000*
Factors influencing food intake and nutritional behavior	Item 7	0.24	0.001*	0.12	0.080
	Item 11	0.63	0.000*	0.20	0.005*
	Item 12	0.75	0.000*	0.37	0.000*

*p<0.01

factors influencing food intake and nutritional behavior sub-dimension ($p < 0.001$). The item-total score correlations range from 0.12-0.53, with all items except Items 1 and 7 being significantly correlated with the total score ($p < 0.001$; Table 4).

Test-Retest

A Pearson correlation analysis was conducted to examine the relationship between the test and retest mean scores from the NutriSTEP, which was readministered after a four-week interval. A strong correlation exists between the NutriSTEP total score and sub-dimensions obtained from the first test and the retest (Table 5).

Table 5. Correlations of NutriSTEP Test-Retest Mean Scores (n=82)

NutriSTEP alt boyutları	Test-retest reliability	
	r	p
Food and fluid intake	0.97	0.000*
Physical growth and development	0.99	0.000*
Physical activity and sedentary behavior	0.99	0.000*
Factors influencing food intake and nutritional behavior	0.95	0.000*
TOTAL	0.99	0.000*

*p<0.001, r: Pearson Correlation Analysis

Response Bias

This study observed no response bias in the participants' responses to NutriSTEP. Hotelling's T-squared test was found to be significant ($T^2 = 443.756$, $p < 0.001$).

DISCUSSION

This study has substantiated the validity and reliability of the Turkish version of NutriSTEP, a questionnaire administered online to parents for evaluating nutrition risk in Turkish preschool children. NutriSTEP was originally developed in Canada (4) and subsequently translated into multiple languages. It has undergone adaptation and validation in various countries, including New Zealand (3) and Iranian (2).

Nutrition risk in preschoolers encompasses a spectrum of factors influencing their nutritional status, ranging from undernutrition to overnutrition. Socioeconomic status has been recognized as a determinant of this risk (4). The domestic environment, particularly parental influence, plays a pivotal role in shaping children's dietary habits toward either healthful or unhealthful choices (13). Maternal emphasis on balanced nutrition can serve as a positive model for children's dietary decisions (5,14). Encouragingly, fostering healthy dietary practices at home can ameliorate children's eating habits (15). Parents have been well-documented as having a profound influence have on their children's feeding behaviors and nutritional status (16). Consequently, employing a parent-centric nutritional risk assessment tool such as NutriSTEP can actively engage parents in strategizing for healthier outcomes.

In accordance with the NutriSTEP developers' risk assessment thresholds, the current study found the percentages of children classified as having low, moderate, and high nutrition risk (low risk ≤ 20; 21< moderate risk < 25; high risk ≥ 26) as 18.4%, 26.0%, and 55.6%, respectively. When considering that the preschools had been selected from districts with the highest level of socioeconomic development (9), the children evidently have high risk levels. Notably, these elevated risk levels surpass the anticipated risk levels NutriSTEP developers had established in Canada as derived from their data encompassing approximately 4,000 preschoolers and toddlers (17). Similarly, the NutriSTEP adaptation study conducted in New Zealand

reported a higher prevalence of high-risk children (31.6%) compared to the original study (3). Parents' dietary habits, food accessibility at home, family dietary patterns, and sociocultural characteristics have major influence on children's dietary behaviors (18).

Many interventions targeting early childhood obesity in the literature have predominantly concentrated on modifying children's nutritional and physical activity behaviors, which yielded limited long-term efficacy, underscoring the need for getting parents involved in interventions (19). Various socioeconomic and sociodemographic factors (e.g., family structure, parental education, income) impact children's and adolescents' access to nutritious foods (20,21). A mother's nutritional knowledge positively influences children's dietary habits, whereas a lower maternal education detrimentally affects nutritional status (22). One study revealed lower parental education and income levels to be associated with unfavorable developmental outcomes in children, with heightened rates of unhealthy eating habits correlating with lower parental education levels (23). Moreover, a family's socioeconomic standing has been linked to their children's dietary habits (24,25), with unhealthy dietary patterns being more prevalent among children from economically disadvantaged families (26). Despite most parents in the current study possessing bachelor's degrees (59.7%), the NutriSTEP scores were seen to be high. Furthermore, NutriSTEP average scores escalated as income level decreased, signifying heightened nutrition risk for children from economically disadvantaged families. In alignment with prior research, the present study has also observed employed mothers to exhibit higher NutriSTEP mean scores compared to non-working mothers.

During the preschool phase, children's dietary preferences and habits predominantly develop in response to familial dietary patterns, with these behaviors often persisting into adulthood without some intervention. Children commonly emulate their parents' dietary choices (13,27). Extended family structures can significantly influence the mother-child dynamic, nutrition attitudes, and practices (28). Notably, the present study has unearthed a significant disparity between NutriSTEP total scores and family structure, with preschoolers residing in extended families demonstrating higher NutriSTEP mean scores than those in nuclear families.

When assessing a scale, item sub-dimensions and their correlations to the total score offer insights into scale-item reliability and should ideally surpass 0.20 (29). In the Turkish NutriSTEP item-total score correlation analysis, two items (Items 1 and 7) failed to correlate with the total score but exhibited correlations with the sub-dimensions. However, no items were excluded from the Turkish NutriSTEP version, as item removal was deemed inappropriate in adaptation studies without the consent of the original scale owner. The scale's validity and reliability testing were not sample-specific (30). Notably,Item 1 in the NutriSTEP tool, which assesses children's grain consumption, exhibited a correlation value of 0.13 with the total score while correlating with the sub-dimension at a value of 0.35. Despite the significance of grain consumption, in Turkish culture, particularly bread, this item may have yielded disparate results due to the association between grain consumption and obesity and further spurred by inadequate nutritional education. Concerns regarding bread and other grain products have escalated due to burgeoning obesity and chronic disease risks, as well as negative messaging from various sources (31). The average daily grain consumption in Türkiye stands at 60.77 g for preschool boys and 58.94 g for girls. In urban locales, the average daily grain consumption for boys and girls is 61.85 g and 62.02 g, respectively, while this dwindles to 58.12 g and 52.35 g respectively in rural regions (32).

NutriSTEP's Item 7 probes whether parents encounter difficulty purchasing food for their children due to cost constraints and boasted a correlation value of 0.12 with the total score, while its correlation with the sub-dimension was 0.24. Responses to this item may vary in developing nations (2). Additionally, one study indicated Item 7 in the NutriSTEP questionnaire to furnish a satisfactory gauge of food security and nutritional risk (33). The remaining items exhibited correlations with the total score in this study, which are indicative of congruence with the scale. Items 16 and 17 garnered higher correlations with their sub-dimensions (0.76 and 0.77, respectively) compared to the total score (r = 0.53). These items respectively encapsulate parental perspectives toward the child's weight and growth trajectory. Item 16 gauges parental comfort with the child's growth, while Item 17 evaluates parental perception of the child's weight in terms of the desired weight. Analogously, the Iranian version of NutriSTEP also reported robust correlations for Items 16 and 17 (2).

This study was conducted online in response to the COVID-19 pandemic. A prior study had attested to the validity and reliability of the online application of NutriSTEP (8). Notably, Hotelling's T-squared test, which gauges equivalence in people's responses to scale items, yielded significance in the present study, suggesting the absence of any response bias on the scale. This outcome implies the parents to have evaluated their children without external influence and to have responded to the scale based on their children's current characteristics. The online iteration of NutriSTEP offers advantages such as broader parental outreach, unbiased outcomes, reduced paper expenditure, instantaneous transmission upon completion, and potential integration into online health records upon request (8). This tool is poised for integration into primary healthcare services and facilitates a swift identification of nutritional risk as well as prompt intervention in the nascent stages.

Conclusions

In conclusion, the Turkish version of NutriSTEP has been authenticated and validated for assessing nutritional risk in preschool children. Given the cultural diversity prevailing across Türkiye's various provinces, deploying this nutritional assessment tool across diverse sociocultural cohorts nationwide holds immense promise. Leveraging the online platform for tool administration extends its reach to a broader parental demographic.

Limitations

Although Cronbach's alpha stands as a well-established and extensively used metric for assessing reliability, its applicability in this study for NutriSTEP was precluded due to non-uniform frequency and selection weights among the test items. Consequently, test-retest analysis was employed to appraise reliability. Another study limitation pertains to the exclusion of illiterate parents, as the tool was administered online.

Ethics Committee Approval: This study was approved by the ethics committee of İstanbul University-Cerrahpasa (IRB number 16.03.2021/53211).

Informed Consent: Written consent was obtained from the parents.

Peer Review: Externally peer-reviewed.

Author Contributions: Conception/Design of Study- M.A., D.G.; Data Acquisition- M.A.; Data Analysis/Interpretation- M.A., D.G.; Drafting Manuscript- M.A., D.G.; Critical Revision of Manuscript- D.G.; Final Approval and Accountability- M.A., D.G.

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