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Developing and validating a life skills questionnaire for Iranian children: A case study of seven-year-olds

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Abstract

Introduction: Assessing life skills in children is a preventive approach to promoting their mental health and quality of life. Regarding the lack of appropriate tools, this study aimed to develop and validate a children's Life Skills Questionnaire (LSQ).

Materials and Methods: In this cross-sectional study in the academic year of 2022-2023, the target population included all seven-year-old children in Kerman City, Iran. Initially, the preliminary questions of the questionnaire were prepared through interviews. Then, using a cluster sampling method, 1140 seven-year-old children from different schools in Kerman were selected. We determined the validity of the questionnaire using face validity, content validity, and construct validity methods. Also, we determined the reliability of the questionnaire using internal consistency and test-retest methods. We identified the optimal cut-off point aiding Receiver Operating Characteristic (ROC) curve analysis and the Youden Index.

Results: The LSQ for children had acceptable face and content validity, qualitatively and quantitatively, although some questions needed revision. The confirmatory factor analysis revealed that the questionnaire comprised 29 questions and six factors. Confirmatory factor analysis also confirmed the six-factor model. Cronbach's alpha for the scale was 0.86, and its dimensions ranged from 0.71 to 0.92. The cut-off point 100 with a Youden Index of 82.10% has the highest accuracy.

Conclusion: Based on the findings, the life skills questionnaire can assess the life skills of seven-year-old children.

Keywords: Child, Life skills, Psychometrics, Questionnaire

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Introduction

Life skills in children encompass a range of cognitive, social, emotional, and practical capabilities that equip them to navigate diverse life challenges, responsibilities, and situations, fostering personal growth and development (1). Cognitive skills include problem-solving, decision-making, creativity, time management, and memory (2,3). Social skills encompass effective communication, collaboration, anger management, and interaction with others (4).

Emotional skills encompass emotion regulation, emotional expression, self-awareness, and adaptability (5,6). Lastly, practical skills include financial management, nutrition, hygiene, and entrepreneurial abilities (7). At the age of seven, children develop social and psychological skills essential for emotion management, problem-solving, decision-making, interpersonal interactions, and communication with others (8-10).

These children's absence of life skills can yield severe and adverse consequences (11,12). For instance, children with insufficient life skills may encounter difficulties in emotional regulation, impaired decision-making, challenges forming connections with others, problem-solving difficulties, limited creativity, and time management (13,14). These challenges can escalate into more significant problems such as behavioral disorders, anxiety, depression, diminished academic and social performance, as well as other psychological and social concerns (15,16). Moreover, children lacking adequate life skills may struggle to cope with daily life pressures and challenges, impeding their ability to navigate them effectively (17). Evaluating life skills in children is essential, serving as a proactive approach to bolster their psychological health and contribute to their well-being. This evaluation quantifies their cognitive, social, emotional, and functional competencies, enabling the development of tailored educational initiatives and interventions (18).

While there are existing questionnaires for assessing children's life skills, such as the Bartlett LSQ for students in grades 9 to 12 (19), CASEL for children aged 8 to 18 years old (20), SELweb LSQ for ages 10 to 18 (21), and KIDSCREEN for children aged 8 to 18 years old (22), these tools have limitations and flaws that necessitate new research. These questionnaires are primarily in English, and with the expansion of modern technologies, new skills have been added to everyday life that were not present when these questionnaires were developed. For example, many children today can do activities such as ordering food online. Moreover, the skills required by children differ due to cultural and social variations across countries, highlighting the importance of focusing on specific needs and required skills in each cultural context.

Particularly in Iran, which has a rich and unique culture with traditions such as Ashura and Tasu'a ceremonies and celebrations like Nowruz, Sizdah Be-dar, and Chaharshanbe Suri, children need skills that align with the lifestyle and national Islamic traditions (23-25). These skills include customs of hospitality, respect for elders, and skills related to social issues such as addiction. We aimed to develop a scale for assessing the life skills of Iranian children, taking into account these cultural features (26). The new scale, based on related studies, interviews with teachers, specialists, parents, and students, and emphasizing cultural distinctions, assesses general skills and encompasses the specific skills required for life in Iranian society. This allows us to design educational programs and interventions that strengthen children's life skills within their cultural framework. Therefore, it is essential to design a new tool that specifically measures life skills in the seven-year-old age group, considering the unique cultural conditions of Iran.

Materials and Methods

This study, conducted in 2022-2023, is part of a broader research initiative to develop a psychometric tool to assess essential life skills in seven-year-old children residing in Kerman City, Iran. It employs a mixed-methods approach, integrating quantitative and qualitative methodologies to comprehensively address the research objectives (27).

In the qualitative phase, we conducted semi-structured interviews to derive the essential skills for the target age group. Purposive sampling was utilized to select participants, ensuring a diverse representation of perspectives, including those of children, parents, teachers, and psychologists. Data saturation was reached after 17 interviews, with no new codes emerging, thus defining the sample size.

Interviews were scheduled in advance, with ethical considerations being paramount. Participants were informed about the goals of the

study, voluntary participation, and the confidentiality of responses. The questions were designed to elicit detailed responses about life skills. Each interview lasted 40 to 50 minutes, based on participant availability and consent.

While developing the LSQ, two researchers independently analyzed the interview data using the 7-stage Classey method for qualitative analysis (28). This process involved iterative readings of the transcripts to extract and interpret relevant skills, ultimately identifying a total of 301 initial skills. At this stage, some items were removed based on precise methodological criteria, including conceptual overlap, excessive complexity for the target age group, insufficient validity and reliability, and lack of congruence with the culture and society under study. These decisions were made to prevent repetition, increase the accuracy of the questionnaire, and ensure that the questionnaire is comprehensible and applicable to seven-year-old children. Additionally, items identified by experts as unnecessary or not aligning with the specific needs of the target community were also removed to ensure that the questionnaire reflects the unique needs of the target society.

These skills were then clustered into domains representing core competencies. The clustering process was guided by a theoretical framework based on existing literature on child development and life skills education.

In the final phase, the main skills and sub-skills were shared with other colleagues for additional review, to enhance their reliability and assign appropriate names (29). This collaborative process also helped identify and rectify any potential shortcomings in their impact. The research team condensed and categorized the identified skills (30). Subsequently, the primary questionnaire was created based on the identified domains and skills. The professors of team reviewed the designed items in a session to ensure their accuracy and validity. Additionally, items with overlapping concepts were consolidated based on the research team's recommendation to streamline the research questionnaires. Following the final approval of the items by the professors of team, the LSQ, comprising 35 questions, was formulated. The LSQ items were scored through a 5-point Likert scale (1: strongly disagree to 5: strongly agree).

Research instrument

Neuropsychological Skills Questionnaire (NSQ): The NSQ for Preschool Children assesses five domains with 51 items rated on a four-point scale. It measures executive functions, processing speed, sensory-motor, perceptual-motor, and linguistic skills. The questionnaire has a reliability of 0.84 and effectively identifies neuropsychological competencies in preschoolers with established cut-off points for diagnostic accuracy (31).

Face validity was confirmed through feedback from the target demographic. In contrast, content validity was established via Content Validity Ratio (CVR) and Content Validity Index (CVI) indices, ensuring the efficacy of questionnaire in evaluating preschoolers' neuropsychological skills.

Structural validity: In this research, we used Exploratory Factor Analysis (EFA) with varimax rotation to examine the structural validity and identify the dimensions of the scale. The data met all factor analysis prerequisites, including a Kaiser-Meyer-Olkin (KMO) value greater than 0.6, ordinal or interval measurement levels, substantial variable correlations (inter-item correlation greater than 0.3), and a factorable correlation matrix (Bartlett's test p-value less than 0.05).

EFA was favored over Principal Component Analysis (PCA) to uncover the latent structure of data through shared variance rather than reducing data dimensionality. Significant factors were those with eigenvalues over 1 (Kaiser's criterion), and varimax rotation was applied for a simplified, interpretable structure (In this study, varimax rotation was used for EFA due to its ability to facilitate the interpretation of factors by creating a simple and comprehensible structure. This orthogonal method, which helps reduce the number of variables with large factor loadings, was chosen because initial analyses indicated that the factors operate independently. Parallel analysis also confirmed that the number of factors retained using varimax is appropriate.). Parallel analysis was conducted to validate the number of factors to retain further. This method compares the actual eigenvalues with those obtained from randomly generated data sets of the same size. It suggests retaining factors with eigenvalues exceeding the corresponding 95th percentile of the random data eigenvalues.

Additionally, Confirmatory Factor Analysis (CFA) was employed to evaluate the fit of the scale. The CFA assumptions, including normality, linearity, and homoscedasticity, were verified before the analysis. The estimation

method used was the Maximum Likelihood (ML) estimation due to its robustness and efficiency in parameter estimation when the assumption of multivariate normality is met (28). The target population for this study comprised seven-year-old children in Kerman City during the 2022-2023 academic year. Distinct samples were utilized for the EFA and the CFA to ensure the validity of the results. For the EFA, the sample size was determined based on the common rule of thumb of 20 respondents per item, resulting in a total sample size of 700 individuals, considering the 35 items in the Life Skills Questionnaire (LSQ) (32). This number meets and exceeds the minimum requirement suggested by Gorsuch (1983), who recommended at least five times the number of items (32). A separate sample of 300 individuals was selected for the CFA, in line with the guidelines provided by Bentler and Chou (1987), which suggest a minimum sample size of 200 for a stable solution (33). The reliability analysis was conducted with another independent sample of 140 individuals, aligning with the recommendations of Nunnally (1978), who suggested a minimum of 100 subjects for a reliable analysis (34). The total sample size of 1,140 individuals was achieved through cluster sampling, ensuring a diverse representation of the target population and adherence to methodological rigor.

Inclusion criteria were voluntary participation, having a seven-year-old child, and residency in Kerman City. Exclusion criteria encompassed incomplete questionnaires and any history of mental disorders in the child or parents.

Cut-off point: To determine the cut-off point for the questionnaire, it was concurrently administered with the NSQ to a sample of 100 individuals from the statistical population. Children scoring above the cut-off point were considered skilled, while those below were considered unskilled. Then, we applied Receiver Operating Characteristic (ROC) curve method. The cut-off score was set from 80 to 140 in increments of 10. For each score, the rates of True Positives (TPR), False Positives (FPR), True Negatives (TNR), and False Negatives (FNR) were calculated along with the Youden Index. The Youden Index, derived from the difference between TPR and FPR (Youden Index)= (TPR) – (FPR)), was used to determine the best cut-off point to enhance the accuracy of this scale (35).

In this study, we used descriptive statistics, content validity (CVR, CVI), EFA, and CFA to validate and determine the structure of scale. We calculated the reliability aiding Cronbach's alpha coefficient and split-half reliability coefficient and by correlating each score with the total score. We analyzed data using SPSS version 21 and LISREL 8.80 software packages.

Results

Of 1112 children, 523 (47.03%) were boys, and 589 (52.97%) were girls. As for the parents' age, 583 (52.43%) were under 40 years old, and 529 (47.57%) were over 40 years old. Furthermore, 570 (51.26%) parents had a secondary school education or less, while 542 (48.74%) had a university education or more (Table 1).

Table 1. Demographic information of participants in the research EFA (n=681), CFA (n=297), reliability (n=37), and total participants (n=1112)

Variable	Group	EFA (n=681)	CFA (n=297)	Reliability (n=135)	Total (n=1112)
Gender of children	Boy	308 (45.23)	152 (51.35)	63(46.67)	523 (47.03)
	Girl	373 (54.77)	144 (48.65)	72(53.33)	589 (52.97)
Parent age	Less than 40 years	353 (51.84)	160 (54.05)	70(51.85)	583 (52.43)
	Above 40 years	328 (48.16)	136 (45.95)	65(48.15)	529 (47.57)
Parent education	Diploma and lower	363 (53.30)	145 (48.99)	62(45.93)	570 (51.26)
	University degree	318 (46.70)	151 (51.01)	73(54.07)	542 (48.74)

EFA: Exploratory Factor Analysis; CFA: Confirmatory Factor Analysis

Results of qualitative analysis: We identified several primary domains of life skills, each comprising specific main and subsidiary skills. These domains include hygiene, social, housekeeping, cognitive, safety, and computer skills. Each domain is focused on behaviors and competencies essential for children's comprehensive development.

These skills include maintaining personal hygiene, engaging in effective social interaction, managing household tasks, utilizing critical thinking, adhering to safety points in various environments, and employing computer technologies at levels ranging from basic to advanced (Table 2).

Table 2. Core and subsidiary life skills with corresponding questionnaire items

Main Skills	Sub-Skills	Questionnaire Items
Hygiene skills	1. Organizing hair and using age-appropriate moisturizers	1. Always combs his/her hair and uses moisturizers suitable for his age.
	2. Regular hand washing with soap	2. Regularly and routinely washes his/her hands with soap.
	3. Independent showering and care for hair and body	3. Can take a shower on his/her own and take care of his/her hair and body using appropriate hygiene products such as shampoo and soap.
	4. Regular teeth cleaning with dental floss or toothbrush	4. Regularly cleans his/her teeth using dental floss or a toothbrush.
	5. Cleaning ears, nose, and eyes	5. Cleans his ears, nose, and eyes.
	6. Dressing in daily and night clothes without assistance	6. Can dress in daily and night clothes without help.
	7. Drying body after bathing without assistance	7. Can dry his/her body after bathing and showering without help.
Social skills	8. Polite behavior with others and participation in group games	8. Always behaves politely with others, especially his/her peers, and participates in group games.
	9. Polite behavior with older individuals and showing respect	9. Always behaves politely with people older than him/her and shows them respect.
	10. Establishing appropriate eye contact and body language with others	10. Establishes appropriate eye contact and body language with others.
	11. Consistent control of emotions and appropriate response	11. Always controls his/her emotions and responds to them properly and appropriately.
Housekeeping skills	12. Regular washing of socks	12. Always washes his/her socks.
	13. Preparing simple foods such as sandwiches and fruits	13. Can prepare simple foods like sandwiches and fruits.
	14. Cleaning the bedroom and collecting dirty toys and clothes	14. Cleans his bedroom and picks up dirty toys and clothes.
	15. Cleaning personal items such as stationery and toys	15. Cleans his/her personal belongings like school supplies and toys.
	16. Assisting parents with daily chores such as wiping the table and sweeping the floor	16. Helps parents with daily chores like wiping the table and sweeping the floor.
Cognitive skills	17. Independent reading and writing	17. Always reads and writes independently.
	18. Identifying numbers up to one hundred and performing addition and subtraction up to ten	18. Identifies numbers up to one hundred and does addition and subtraction up to ten.
	19. Learning new concepts such as big and small, light and heavy	19. Learns new concepts such as big and small, light and heavy, under and over, before and after.
	20. Memorizing the alphabet, words, and short sentences	20. Memorizes the alphabet, words, and short sentences.
	21. Reading and writing the names of family members	21. Can read and write the names of family members.
Safety skills	22. Holding parents' hands when crossing the street	22. Holds parents' hands when crossing the street and walking.
	23. Properly crossing the street with parental supervision	23. Properly crosses the street with parental supervision and following traffic signs.
	24. Not leaving the house without parental permission	24. Does not leave the house without parental permission.
	25. Not opening the door to strangers	25. Does not open the door for strangers.
	26. Not entering groups of strangers	26. Does not enter groups of strangers.
	27. Not engaging with strangers	27. Does not communicate with strangers.
	28. Familiarity with the expiration dates of food items	28. Is familiar with food expiration dates.
	29. Careful use of electrical appliances	29. Uses electrical appliances carefully.
	30. Familiarity with emergency numbers such as 110, 115, and 125 and reporting in emergencies	30. Knows the emergency phone numbers like 110, 115, and 125 and informs them in case of problems.
Computer skills	31. Ability to work with a computer	31. Is able to work with a computer (familiar with keyboard, mouse, display, and files).
	32. Working with Microsoft Word	32. Can work with Microsoft Word (typing text, adding photos, audio, and video files to text).
	33. Using the Internet	33. Can use the Internet (the ability to search for information such as online games, videos, websites, and educational content).
	34. Using passwords	34. Uses passwords.
	35. Writing simple programs for oneself	35. Writes simple programs for himself.

Face validity: We assessed the face validity through interviews with parents and ratings by children using convenience sampling. Revisions were made for items needing more clarity. The item impact method, with a coefficient formula of Score= Percentage Frequency × Importance, indicated most items were impactful, but items 5 and 12 were below the threshold and retained for further evaluation (36). Content validity: Ten life skills experts assessed content validity in the study through qualitative feedback and quantitative measures (CVR and CVI). Most items met the CVR acceptability criteria of 0.70 or higher and the CVI threshold of 0.70, however items 5, 7, 12, 19, 22, and 26 fell below these thresholds, indicating a need for potential revision pending further reliability analysis (37,38). EFA: To assess the suitability of the correlation matrix for factor analysis, both sample size adequacy and Bartlett's test of sphericity were employed. The results revealed a KMO value of 0.93, presenting a proper sample size for this research. Thus, the sample size for this analysis was deemed sufficient (39). Bartlett's test of sphericity yielded x2= 9392.78 (df= 406, *P*< 0.001). Additionally, the inter-item correlation coefficients ranged from 0.57 to 0.71, signifying that no item required removal from the questionnaire (40).The parallel analysis and Kaiser's criterion results indicated that the scale comprises six factors. Furthermore, according to the PCA with varimax rotation, these six factors explain a cumulative variance of 63.90% (41). Specifically, the first factor accounts for 15.17% of the variance, the second factor for 11.22%, the third factor for 11.18%, the fourth factor for 8.88%, the fifth factor for 8.73%, and the sixth factor also for 8.73% of the variance. Table 3 presents the questions associated with each dimension. According to the table, questions 1-5 are categorized as health skills. Hence, they are labeled as health skills. Questions 6-9 are related to social skills and labeled accordingly. Questions 10-13 correspond to housekeeping skills and are labeled as such. Questions 14-17 are designated as cognitive skills. Questions 18-24 are associated with safety skills. Finally, questions 25-29 are identified as computer skills.

CFA: Table 3 illustrates the overall goodness of fit indices for the LSQ. The results, considering the Chi-square/Degrees of Freedom (CMIN/DF), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Parsimonious Normed Fit Index (PNFI), and Root Mean Square Error of Approximation (RMSE), along with the acceptable fit indices, indicate that the data align with a six-factor model (Table 4 and Figure 1).

Table 3. Rotated component matrix for the study items

Items	Item number in questionnaire (Appendix 2)	Component					
		Safety skills	Hygiene skills	Computer skills	Housekeeping skills	Cognitive skills	Social skills
i1	1	0.18	0.70	0.13	0.15	0.01	0.17
i2	2	0.17	0.74	0.12	0.20	0.04	0.16
i3	3	0.18	0.75	0.12	0.11	0.00	0.14
i4	4	0.19	0.75	0.14	0.10	0.02	0.11
i5	6	0.22	0.73	0.17	0.15	-0.01	0.14
i6	8	0.20	0.21	0.22	0.15	0.01	0.72
i7	9	0.20	0.19	0.19	0.14	-0.02	0.74
i8	10	0.19	0.21	0.22	0.16	0.03	0.70
i9	11	0.23	0.13	0.19	0.17	0.02	0.71
i10	13	0.25	0.17	0.19	0.70	0.01	0.13
i11	14	0.21	0.17	0.21	0.75	-0.02	0.16
i12	15	0.21	0.18	0.19	0.72	-0.01	0.18
i13	16	0.24	0.18	0.15	0.72	0.01	0.14
i14	17	-0.01	-0.01	-0.04	0.01	0.82	0.05
i15	18	0.01	0.03	0.02	0.00	0.80	-0.01
i16	20	-0.04	0.03	0.06	0.00	0.77	-0.01
i17	21	0.02	-0.01	0.04	-0.01	0.79	0.01
i18	23	0.69	0.21	0.17	0.13	-0.04	0.15
i19	24	0.74	0.17	0.14	0.16	0.01	0.12
i20	25	0.70	0.17	0.13	0.16	-0.03	0.19

i21	27	0.72	0.13	0.16	0.18	-0.02	0.13
i22	28	0.72	0.17	0.14	0.20	0.01	0.16
i23	29	0.74	0.13	0.18	0.09	0.03	0.14
i24	30	0.75	0.16	0.15	0.15	0.01	0.08
i25	31	0.18	0.16	0.67	0.18	0.02	0.17
i26	32	0.14	0.15	0.70	0.14	0.04	0.19
i27	33	0.20	0.11	0.72	0.15	0.05	0.18
i28	34	0.20	0.16	0.77	0.13	-0.01	0.14
i29	35	0.20	0.11	0.79	0.14	0.02	0.14

Table 4. General indicators of the fit of the LSQ among children

		CMIN/DF	GFI	AGFI	NFI	CFI	IFI	PNFI	RMSEA
Results	Six-factor model	1.39	0.90	0.88	0.85	0.95	0.95	0.78	0.04
	Five-factor model	4.12	0.81	0.80	0.75	0.87	0.89	0.49	0.09
	Seven-factor model	5.12	0.79	0.80	0.71	0.86	0.85	0.41	0.10
Acceptable fit		5.00	0.80	0.80	0.80	0.80	0.80	0.50	0.10

Additionally, comparing this model with the five-factor and seven-factor models demonstrates the superiority of the six-factor model. The five-factor model has a CMIN/DF of 4.12, close to the upper acceptable limit, and an RMSEA of 0.09, near the maximum acceptable value. The seven-factor model even has a higher CMIN/DF of 5.12 and an RMSEA of 0.10, indicating a less satisfactory fit (Table 4). These comparisons emphasize the six-factor model as the most suitable for the LSQ, providing a more accurate representation of the data and aligning with theoretical expectations. The survey instrument demonstrates satisfactory reliability and validity across all six dimensions measured. The Composite Reliability (CR) scores range from 0.735 to 0.829, indicating good internal consistency, with the Safety Skills dimension showing the highest reliability. The Average Variance Extracted (AVE) scores are between 0.410 and 0.456, suggesting that the constructs in each dimension capture a moderate to substantial amount of variance (Table 5).

Table 5. Reliability measures for the life skills scale across different domains

	Total	Safety skills	Hygiene skills	Computer skills	Housekeeping skills	Cognitive skills	Social skills
Cronbach's Alpha	0.83	0.87	0.74	0.81	0.75	0.70	0.92
Lambda1	0.81	0.75	0.71	0.75	0.71	0.73	0.70
Lambda2	0.86	0.88	0.75	0.82	0.75	0.71	0.93
Lambda3	0.83	0.87	0.74	0.81	0.75	0.70	0.92
Lambda4	0.68	0.87	0.75	0.75	0.76	0.73	0.95
Lambda5	0.83	0.85	0.74	0.80	0.74	0.71	0.91
Lambda6	0.87	0.88	0.73	0.82	0.71	0.77	0.94
CR		0.83	0.81	0.80	0.74	0.76	0.74
AVE		0.41	0.46	0.44	0.41	0.44	0.41

Reliability: The LSQ was subjected to a rigorous reliability analysis using internal consistency methods. The comprehensive results are encapsulated in Tables 4 and 5, which include a total of 35 items. The reliability coefficients, such as Cronbach's Alpha and Guttman's Lambda, range from satisfactory to high across different domains, indicating a robust internal consistency (Table 5). Specifically, Cronbach's Alpha values span from 0.70 for cognitive skills to 0.92 for social skills, while Guttman's Lambda coefficients vary, with Lambda6 reaching as high as 0.94 for social skills (Table 4). Items with a scale mean not exceeding the computed mean of 73.49, and a corrected item-total correlation below the threshold of 0.20 were considered for exclusion. Items 5, 7, 12, 19, 22, and 26, which did not meet the latter criterion, have been recommended for removal to enhance the overall reliability of the LSQ (Table 6).

Cut-off point: The 100 with a Youden Index of 82.10% has the highest accuracy. This point has a true positive rate of 94.44% and a false positive rate of 12.35%. Increasing the cut-off point to 140 reduces the Youden Index to 49.74%, which decreases the test's accuracy (Table 7).

Table 6. Question-total statistics for Children's Life Skills Scale

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
i1	70.73	369.87	0.51	1.00	0.83
i2	71.11	368.82	0.54	1.00	0.82
i3	70.76	369.58	0.52	0.98	0.82
i4	71.19	375.71	0.40	1.00	0.83
i5	71.03	396.53	0.03	0.95	0.84
i6	71.43	370.92	0.48	1.00	0.83
i7	71.32	398.23	0.00	0.98	0.84
i8	71.57	386.59	0.21	1.00	0.83
i9	71.46	390.03	0.16	1.00	0.84
i10	71.51	389.37	0.16	1.00	0.84
i11	71.35	390.79	0.13	1.00	0.84
i12	71.65	396.73	0.03	0.89	0.84
i13	71.51	385.20	0.21	0.99	0.83
i14	71.41	383.14	0.28	0.99	0.83
i15	71.59	373.97	0.44	1.00	0.83
i16	71.57	380.31	0.36	1.00	0.83
i17	71.51	365.09	0.49	1.00	0.83
i18	71.43	365.25	0.55	1.00	0.82
i19	71.38	396.91	0.02	0.93	0.84
i20	71.22	364.06	0.56	1.00	0.82
i21	71.65	366.73	0.49	1.00	0.83
i22	71.70	400.33	-0.04	0.92	0.84
i23	71.65	368.85	0.50	0.99	0.83
i24	71.24	362.41	0.57	1.00	0.82
i25	71.38	371.24	0.47	1.00	0.83
i26	71.49	401.48	-0.06	0.95	0.84
i27	71.65	366.46	0.48	1.00	0.83
i28	71.38	359.80	0.69	0.99	0.82
i29	71.22	360.56	0.65	0.99	0.82
i30	71.46	369.59	0.59	0.99	0.82
i31	71.51	386.48	0.20	1.00	0.83
i32	71.16	382.86	0.25	1.00	0.83
i33	71.59	389.53	0.14	1.00	0.84
i34	71.38	388.46	0.16	1.00	0.84
i35	71.35	388.62	0.15	1.00	0.84

Table 7. ROC curve for determining the cut-off point for the scale

	TN (True Negative)	FN (False Negative)	FP (False Positive)	TP (True Positive)	TPR (True Positive Rate)	FPR (False Positive Rate)	Youden Index
80	17	55	1	26	32.10%	5.56%	26.54%
90	66	6	1	26	81.25%	1.49%	79.76%
100	71	1	10	17	94.44%	12.35%	82.10%
110	71	1	11	16	94.12%	13.41%	80.70%
120	71	1	17	10	90.91%	19.32%	71.59%
130	71	1	20	7	87.50%	21.98%	65.52%
140	71	1	24	3	75.00%	25.26%	49.74%

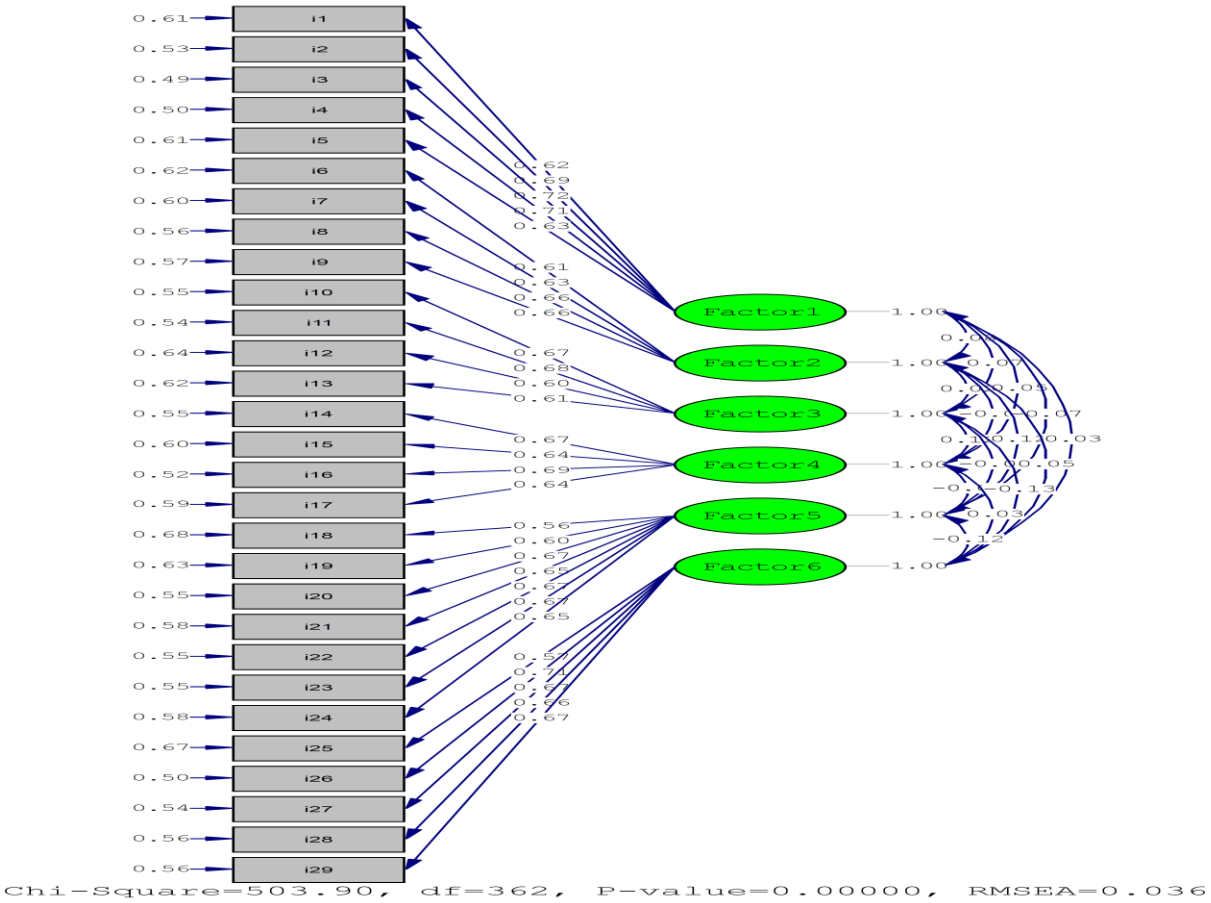

Figure 1. CFA results

Discussion

The need for robust instruments for children's assessment is a critical challenge in life skills research. The developed LSQ underwent rigorous face and content validity processes. Items with impact coefficients below 1.5 were revised, ensuring the alignment of LSQ with the target demographic perspectives. Most items met the CVI and CVR criteria, though some required refinement. This iterative validation process underscores the potential of LSQ as a reliable tool, with ongoing modifications enhancing its precision and applicability. The questionnaire developed for assessing children's life skills includes 29 items across six dimensions-health, social, household, cognitive, safety, and computer skills—which explain 63.90% of the variance in life skills. The CFA results suggest that this six-factor model fits the data well. The comparison of dimensions within the existing children's LSQ reveals that computer skills have been introduced as an emerging dimension. This aspect is rarely addressed in other established questionnaires such as SELweb LSQ, KIDSCREEN, CASEL, and Bartlett LSQ (19-22). This shift aligns with the increasing societal need to equip children for the digital world. Moreover, unlike the questionnaires above, this scale does not reference certain skills such as management skills, negotiation and presentation abilities, financial skills (budgeting and saving), and artistic skills, which are essential for navigating the challenges of modern society. These skills have not been fully covered in questionnaires like SELweb LSQ, KIDSCREEN, CASEL, and Bartlett LSQ (19-22).

Therefore, dimensions such as management skills, negotiation and presentation abilities, and financial and artistic skills could be considered to expand the questionnaire further and align it with other assessment tools. Management skills include time planning, decision-making, and problem-solving, while artistic skills encompass creativity, innovation, and expression. These new dimensions could assist children in developing skills that will be beneficial for future success in educational and professional environments. The LSQ is validated as a reliable tool for assessing life skills. All items show significant positive correlations to the overall

score and strong internal consistency, enhancing its evaluative accuracy. However, the limitations included a sample confined to Kerman City, which may not reflect the broader Iranian context and sensitive questions that could affect response accuracy. To address these, future research should expand the sample to diverse settings and consider anonymizing responses to ensure validity.

Conclusion

The primary objective of this study was to create an innovative assessment tool specifically designed for evaluating the life skills of 7-year-old children. This comprehensive tool encompasses six key dimensions: health skills, social skills, household skills, cognitive skills, safety skills, and computer skills. The findings revealed that the questionnaire exhibits favorable psychometric properties, indicating its suitability as a valuable instrument for assessing the life skills of 7-year-old children.

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Conflict of Interests

The authors declare no conflict of interest.

Funding

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Ethical Considerations

The study forms part of the first author's doctoral thesis and has ethical clearance from Islamic Azad University. All participants signed informed consent. Also, they were ensured about the confidentiality of responses.

Code of Ethics

IR.IAU.KERMAN.REC.1401.014.

Authors' Contributions

FS and MK wrote the manuscript, ZZM, and AMT performed the statistical analysis and validation, and approved the final article.

References

1. United Nations Children's Fundation. Life skills: What are they, why do they matter, and how are they taught? New York: United Nations Children's Fundation. [cited 2018]. Available from: https://www.unicef.org/india/media/2571/file/Comprehensive-lifeskills-framework.pdf.
2. Bergenholtz C, Vuculescu O, Amidi A. Microfoundations of adaptive search in complex tasks: The role of cognitive abilities and styles. Organ Sci (Linthicum) 2023; 34(6): 2043-63.
3. Vasilopoulos F, Jeffrey H, Wu Y, Dumontheil I. Multi-level meta-analysis of whether fostering creativity during physical activity interventions increases their impact on cognitive and academic outcomes during childhood. Sci Rep 2023; 13(1): 8383.
4. Chrzan-Rodak A, Nowicki GJ, Schneider-Matyka D, Grochans E, Ślusarska B. Impact of the empathic understanding of people and type D personality as the correlates of social skills of primary health care nurses: A cross-sectional study. Int J Environ Res Public Health 2023; 20(1): 201.
5. Drigas A, Papoutsi C, Skianis C. Being an emotionally intelligent leader through the nine-layer model of emotional intelligence—The supporting role of new technologies. Sustainability 2023; 15(10): 8103.
6. Otajonov J, Ikromova M. Methods of implementation of moral and intellectual education of children of pre-school education organization. International bulletin of applied science and technology 2023; 3(5): 742-6.
7. Sousa M. Entrepreneurship skills development in higher education courses for teams leaders. Adm Sci 2018; 8: 18.
8. Jones S, Bouffard S, Weissbourd R. Educators' social and emotional skills vital to learning. Phi Delta Kappan 2013; 94: 62-5.
9. Jones SM, Brown JL, Hoglund WL, Aber JL. A school-randomized clinical trial of an integrated social-emotional learning and literacy intervention: Impacts after 1 school year. J Consult Clin Psychol 2010; 78(6): 829-42.
10. Schonert-Reichl KA, Lawlor MS. The effects of a mindfulness-based education program on pre- and early adolescents' well-being and social and emotional competence. Mindfulness 2010; 1(3): 137-51.
11. Livingstone S, Mascheroni G, Stoilova M. The outcomes of gaining digital skills for young people's lives and wellbeing: A systematic evidence review. New Media Soc 2023; 25(5): 1176-202.
12. Shukla S, Ezebuihe JA, Steinert JI. Association between public health emergencies and sexual and reproductive health, gender-based violence, and early marriage among adolescent girls: a rapid review. BMC Public Health 2023; 23(1): 1-14.
13. Blair C, Raver CC. School readiness and self-regulation: A developmental psychobiological approach. Ann Rev Psychol 2015; 66: 711-31.
14. Hamilton SF. On the 4-H study of positive youth development. J Youth Adolesc 2014; 43(6): 1008-11.
15. Madsen OJ. Life skills and adolescent mental health: Can kids be taught to master life?: Oxfordshire, United Kingdom: Taylor and Francis; 2023.

16. Yadav KK, Reddy LJ. [Psychological effects of technology on college students]. Lin Chuang Er Bi Yan Hou Tou Jing Wai Ke Za Zhi 2023; 27(1): 1805-16. (Chinese)
17. Åkerman AKE, Holmqvist R, Falkenström F. What changes during specialized foster care? A study on adaptive functioning and emotional and social problems. Child Fam Soc Work 2023; 28(2): 405-16.
18. Sherif Y, Azman AZF, Awang H, Mokhtar SA, Mohammadzadeh M, Alimuddin AS. Effectiveness of life skills intervention on depression, anxiety and stress among children and adolescents: A systematic review. Malays J Med Sci 2023; 30(3): 42-59.
19. Bartlett Life Skills Research Center. Bartlett Life Skills Questionnaire 2020. Available from: https://www.bartlettlifeskills.com/.
20. CASEL. CASEL- Measuring SEL. Collaborative for Academic, Social, and Emotional Learning CASEL CASEL 2020. Available from: https://casel.org/measuring-sel/
21. McKown C, Kharitonova M, Russo-Ponsaran NM, Aksu-Dunya B. Development and validation of a shortened form of SELweb EE, a Web-based assessment of children's social and emotional competence. Assessment 2023; 30(1): 171-89.
22. The KIDSCREENGroup Europe. The KIDSCREEN questionnaires: Quality of life questionnaires for children and adolescents. Lengerich: Pabst Science; 2006.
23. Sanjari S, Kamali A, AmirFakhraei A, Mohammadi Soleimani MR, Karimi Afshar E. Construction and validation of a self-report violence scale in Iranian women. Journal of fundamentals of mental health 2021; 23(3): 181-9.
24. Nayereh H, Hassan Sattari S. Cultural differences in Muharram rituals. Tourism of culture journal 2023; 4(12): 6-15.
25. Yas Salari Pashghi F, Sanjari S, AmirFakhraei A. [Presenting a conceptual model of Islamic strategies for coping with coronavirus stress: A fundamental theory]. Iranian journal of culture and health promotion 2023; 6(4): 688-93.
26. Mehni O, Mashayekhi M, Mokhtari S, Faizy A, Tavan A. [The relationship between organizational identity and academic optimism with the mediating role of organizational image in the Islamic schools in Tehran]. Quarterly journal of applied Issues of Islamic education 2021; 6(3): 103-22. (Persian)
27. Farahani H, Roshan Chesli R. [Essentials for developing and validating psychological scales: Guide to best practices]. Clinical psychology and personality 2020; 17(2): 197-212. (Persian)
28. Sanjari S, Soleimani MRM, Keramat A. Development and validation of an electronic scale for sexual violence experiences in Iranian women. Crescent journal of medical and biological sciences 2023; 10(1): 27-35.
29. Salari Chineh P, Tavan A, Soltani Nezhad N, Manzari Tavakoli V. [A model of professional ethics education for the student-teachers at Tarbiat Modarres University: A qualitative study]. Journal of higher education curriculum studies 2023; 14: 143-69. (Persian)
30. Sajadi Monazah H, Mohammadi Soliemani MR, Jahan F. Investigating the factor structure and validation of the multidimensional scale of acceptance of collective violence among teenagers: An exploratory and confirmatory factor analysis. Iran J Psychiatry Behav Sci 2024; 18(2): e137999.
31. Hashemi Hashjin B, Sharifi T, Mashhadizadeh S, Ahmadi R. [Evaluation of normative scores of Neuropsychological Skills Teacher Form Questionnaire of preschool children]. Shenakht- Journal of psychology and psychiatry 2022; 9(1): 134-50. (Persian)
32. Sanjari S, Mohammadi Soleimani MR. Validation of the knowledge sharing behavior scale among nursing and midwifery faculty members in Iran: Psychometric properties and cross-cultural adaptation. Middle East jouranl of rehabilitation and health studies 2024; 11(1): e134886.
33. Barani H, Mohammadi Soleimani MR, Amirfakhraei A, Wahab Samavi SA. Transcultural adaptation and psychometric evaluation of the online learning self-efficacy scale among high school seniors in Bandar Abbas City. Interdiscip J Virtual Learn Med Sci 2024; 15(1): 62-75.
34. Sanjari S, Soleimani MRM. Validation of the Persian version of the engagement in E-Learning scale in students of the School of Nursing and Midwifery in Iran. Middle East jouranl of rehabilitation and health studies 2023; 10(3): e134881.
35. Razavi SM, Haji Alizadeh K, Amirfakhraei A. Psychometric evaluation of the Persian version of the post-traumatic symptom scale: Exploratory and confirmatory factor analysis. Iran J Psychiatry Behav Sci 2024; 18(2): e141873.
36. Sanjari S, Fakhraei AA, Soleimani MRM, Alidousti K. Validation of the slade fear of childbirth scale for pregnancy in a sample of Iranian women: A cross-sectional study. Crescent journal of medical and biological sciences 2022; 9(3): 138-46.
37. Yeganeh H, Parvaresh H, Dehghani GM, Mohammadi SM. [Validation of the HSE assessment tools in the Kerman Province Steel Industry Complex: A case study]. Journal of School of Public Health and Institute of Public Health Research 2023; 20(4): 423-34. (Persian)

38. Heidari A, Babaei Nezhad A. [Evaluation of the relationship between emotional intelligence and social intelligence with employees' job performance (Case study: General Department of Social Security of Kerman province)]. Political sociology research 2022; 4(4): 4974-90. (Persian)
39. Torabi B, Amirfakhrae A, Rezaei Gazaki P, Mohammadi Soleimani MR. [Investigation of factor structure and validation of Ryff's Psychological Well-Being Scale in working children in the corona crisis: A descriptive study]. Journal of Rafsanjan University of Medical Sciences 2022; 21(2): 149-64. (Persian)
40. Sanjari S, Rafati F, Amirfakhraei A, Mohammadi Soleimani MR, Karimi Afshar E. [Evaluation of factor structure and validation of electronic form of CAQ Fear of Delivery Questionnaire in pregnant women]. Health Psychology 2021; 10: 57-70. (Persian)
41. Hamed Y, Hossein P, Mohsen D, Mahmood S. [Construction and standardization of performance evaluation test of health, safety and environment management systems of industrial sector contractors]. Journal of health management 2022; 12(3): 73-86. (Persian)