



# Adapting the Community Readiness Model and Validating a Community Readiness Tool for Childhood Obesity Prevention Programs in Iran

Mahdieh Niknam<sup>1</sup>, Nasrin Omidvar<sup>2</sup>, Parisa Amiri<sup>1</sup>, Hassan Eini-Zinab<sup>2</sup>, Naser Kalantari<sup>2</sup>

<sup>1</sup>Research Center for Social Determinants of Health, Research Institute for Endocrine Sciences, Shahid Beheshti University of Medical Sciences, Tehran, Iran; <sup>2</sup>Department of Community Nutrition, National Nutrition and Food Technology Research Institute, Faculty of Nutrition Sciences and Food Technology, Shahid Beheshti University of Medical Sciences, Tehran, Iran

**Objectives:** It is critical to assess community readiness (CR) when implementing childhood obesity prevention programs to ensure their eventual success and sustainability. Multiple tools have been developed based on various conceptions of readiness. One of the most widely used and flexible tools is based on the community readiness model (CRM). This study aimed to adapt the CRM and assess the validity of a community readiness tool (CRT) for childhood obesity prevention programs in Iran.

**Methods:** A Delphi study that included 26 individuals with expertise in 8 different subject areas was conducted to adapt the CRM into a theoretical framework for developing a CRT. After linguistic validation was conducted for a 35-question CR interview guide, the modified interview guide was evaluated for its content and face validity. The quantitative and qualitative analyses were performed using Stata version 13 and MAXQDA 2010, respectively.

**Results:** The Delphi panelists confirmed the necessity/appropriateness and adequacy of all 6 CRM dimensions. The Persian version of the interview guide was then modified based on the qualitative results of the Delphi study, and 2 more questions were added to the community climate dimension of the original CRT. All questions in the modified version had acceptable content and face validity. The final CR interview guide included 37 questions across 6 CRM dimensions.

**Conclusions:** By adapting the CRM and confirming linguistic, content, and face validity, the present study devised a CRT for childhood obesity prevention programs that can be used in relevant studies in Iran.

**Key words:** Childhood obesity, Prevention, Community readiness model, Delphi study, Iran

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**Corresponding author:** Nasrin Omidvar  
Department of Community Nutrition, National Nutrition and Food Technology Research Institute, Faculty of Nutrition Sciences and Food Technology, Shahid Beheshti University of Medical Sciences, West Arghavan Street, Shahrak Oods, Tehran 1981629573, Iran

**E-mail:** [omidvar.nasrin@gmail.com](mailto:omidvar.nasrin@gmail.com)

**Co-corresponding author:** Parisa Amiri  
Research Center for Social Determinants of Health, Research Institute for Endocrine Sciences, Shahid Beheshti University of Medical Sciences, Velenjak Street, Shahid Chamran Highway, Tehran 1985717413, Iran

**E-mail:** [amiri@endocrine.ac.ir](mailto:amiri@endocrine.ac.ir)

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## INTRODUCTION

Childhood obesity is a complex public health problem associated with adult obesity and various adverse health, social, and psychological consequences [1]. Iran is among the countries with the highest prevalence of childhood obesity, and excessive weight gain in children has become a critical public health issue [2,3]. Prevention and early intervention approaches have been identified as the most effective ways to address this challenge [4].

Recent trends in obesity research have emphasized the need for community involvement to prevent and manage obesity [5,6]. Evidence shows that a successful intervention in

**Table 1.** The 9 stages of community readiness with corresponding scores

Stage (readiness score)	Description
1. No awareness (1-1.99)	The issue is normative, accepted, and not generally recognized by the community or leaders as a problem
2. Denial (2-2.99)	Only a few community members recognize that the issue is a concern; the community and leadership do not support dealing with the matter
3. Vague awareness (3-3.99)	Community members and leaders believe that the issue may be a concern, but there is no immediate motivation to address it
4. Preplanning (4-4.99)	Community members and leaders acknowledge that the issue is a concern; the efforts are not focused or detailed
5. Preparation (5-5.99)	Most community members have basic knowledge of the issue and are concerned about it; leaders are planning; some resources have been identified; and community members and leaders are actively working to secure resources
6. Initiation (6-6.99)	Leaders play a crucial role in planning efforts to address the problem; enough information is available; and resources have been allocated to support efforts
7. Stabilization (7-7.99)	Most community members have more than basic knowledge of local efforts and issues; leaders are actively involved in ensuring or improving the long-term viability of efforts
8. Confirmation/Expansion (8-8.99)	Efforts are in place; community members strongly support efforts; leaders play a crucial role in expanding and improving efforts
9. High level of community ownership (9-9.99)	Most community members have sophisticated and detailed knowledge of local efforts and issues; leaders continually review evaluation results and modify financial support; resources are secured

one community may fail in another if the latter community is not ready to accept the issue as a problem [7,8]. Community readiness (CR) refers to the extent to which a community can take action or make changes related to an issue.

Several tools have been developed based on the various conceptions of readiness [9-15]. One of the most frequently used assessment tools is based on the community readiness model (CRM) developed by the Tri-Ethnic Center of Colorado State University [8]. The CRM is commonly used in developed communities to provide insight into how communities become ready to address issues [16-21]. Quantifying readiness is complex, but as a mixed-method approach, the CRM incorporates qualitative items and a numerical scoring system [20]. The model assesses 6 dimensions, including (1) existing prevention efforts, (2) community knowledge of the prevention efforts, (3) leadership, (4) community climate, (5) community knowledge of the issue, and (6) available resources to support a prevention effort, and scores for readiness are determined through in-depth interviews with key individuals from the communities. Interviews are then transcribed, and each dimension is scored using a 9-point descriptive statement anchored rating scale (Table 1) [8].

A readiness assessment should be issue-specific and community-specific. While a community can be defined in various ways, socio-cultural factors surrounding each community affect the assessment in terms of both the approach and function [8]. Many studies have found several nutrition-related socio-cultural and traditional beliefs to be key determinants of overweight and obesity in children. Studies from Iran and de-

veloping countries have shown that misperceptions regarding healthy eating and childhood obesity tend to be firmly ingrained in mothers and grandmothers of children [22,23]. Therefore, community-based studies on childhood obesity prevention, such as readiness studies, are meaningful since they consider the cultural and social components of the society. While the CRM and its dimensions are clearly defined and can be used in various contexts with a focus on different issues, some studies have made substantial modifications to improve the model's fit beyond the specified protocol [24]. Thus, applying the CRM and its assessment tool to a specific society (e.g., Iran) must be understood within the present-day cultural context and requires customized strategies [25]. To meet this need, expert consultation using the Delphi method is recommended as the favored structured approach for seeking a better understanding of particular issues in context to reach a consensus about the validity of the CRM dimensions [26].

Despite the importance of a CR assessment for the eventual success and sustainability of any prevention program, no community readiness tools (CRTs) have been developed to measure CR among the Iranian population. Thus, the present study aimed to adapt the CRM and examine the validity of the CRM tool to devise a CRT for childhood obesity prevention programs in Iran.

## METHODS

The current study was designed to be conducted in the following 2 phases:

## Phase 1: Adaptation of the Model Using the Delphi Method

A Delphi study was conducted to achieve a consensus regarding the CRM and its dimensions related to childhood obesity prevention within the socio-cultural context of Iran in 4 steps.

### Step 1: development of a Delphi questionnaire

A questionnaire was developed that included 2 main questions. In the first question, 6 dimensions of the CRM and related descriptive items were presented, and the respondents were asked to rate the necessity/appropriateness of each dimension. Necessity/appropriateness was defined as the degree to which each CRM dimension is necessary and culturally appropriate for assessing the readiness of the Iranian community to engage with childhood obesity prevention programs. The experts answered using a 5-point Likert scale, with scores of 4 or 5 indicating "strongly agree," 1 or 2 indicating "strongly disagree," and 3 indicating "neither agree nor disagree." The second question assessed the adequacy of the CRM dimensions by asking the experts to share their opinions about possible other required dimensions.

### Step 2: expert selection and invitation

Eligible experts for the Delphi panel were identified using the purposive sampling method, including the criterion and snowball sampling techniques. Expert selection was conducted in 5 steps: (1) identification of areas of expertise, fields of study, associations, and organizations related to childhood obesity; (2) preparation of an initial list of experts; (3) expansion of the list of experts through contact with the identified experts; (4) preparation of a ranked and categorized list of experts based on their experience and organizations; (5) final selection of experts to participate in the study and completion of a table with the experts' names, affiliations/titles, and contact information.

Thirty-three research and education faculty members were identified from 14 universities with medical science programs across 12 provinces of Iran. They included experts from 8 scientific disciplines with at least 10 years of experience in children's research, health, and well-being. After inviting potential participants via email or phone, 26 experts agreed to participate in the current study (Table 2).

**Table 2.** Characteristics of the experts of the Delphi study

Characteristics	Invited experts (n=33)	Participating experts (n=26)
Sex		
Male	18 (54.5)	12 (46.0)
Female	15 (45.5)	14 (54.0)
Occupation		
Nutritionist	9 (27.0)	7 (27.0)
Health education and promotion specialist	5 (15.0)	4 (15.0)
Sociologist	3 (9.0)	3 (11.5)
Epidemiologist	2 (6.0)	2 (7.5)
Health policy specialist	5 (15.0)	2 (7.5)
Child psychologist	3 (9.0)	3 (11.5)
Pediatrician	2 (6.0)	2 (7.5)
Social medicine specialist	4 (12.0)	3 (11.5)
Universities of Medical Sciences/Provinces		
Tehran/Tehran	4 (12.0)	3 (11.5)
Iran/Tehran	3 (9.0)	3 (11.5)
Shahid Beheshti/Tehran	4 (12.0)	4 (15.4)
Alborz/Alborz	2 (6.0)	1 (3.8)
Shiraz/Fars	3 (9.0)	2 (7.7)
Mashhad/Razavi Khorasan	2 (6.0)	2 (7.7)
Tabriz/East Azarbaijan	2 (6.0)	1 (3.8)
Isfahan/Isfahan	2 (6.0)	2 (7.7)
Kermanshah/Kermanshah	1 (3.0)	1 (3.8)
Hamadan/Hamadan	2 (6.0)	1 (3.8)
Jondishapur/Ahvaz	2 (6.0)	1 (3.8)
Shahid Sadoughi/Yazd	2 (6.0)	2 (7.7)
Kerman/Kerman	2 (6.0)	1 (3.8)
Gilan/Gilan	2 (6.0)	2 (7.7)
Years of experience		
10-15	16 (48.5)	14 (54.0)
15-20	9 (27.3)	6 (23.0)
>20	8 (24.2)	6 (23.0)
Age (y)		
40-50	7 (21.2)	6 (23.0)
50-60	17 (51.5)	14 (54.0)
>60	9 (27.3)	6 (23.0)

Values are presented as number (%).

### Step 3: the Delphi rounds

The Delphi study was performed in 3 rounds. In the first round, the experts received a questionnaire in person or via email. Responses were analyzed quantitatively for the first question and qualitatively for the second question. The following rounds were designed based on the qualitative and quantitative results to resolve disagreements and determine the proper placement of new components suggested by the ex-

pert panel. Proper placement was defined as the degree to which the experts' opinions were located in the correct area of the related CRM dimension.

#### **Step 4: data analysis**

Two measures were combined and used to analyze the quantitative data: (1) the percentage of respondents who strongly agreed, and (2) the median, 25th, and 75th percentile scores (median [ $P_{25}$ ,  $P_{75}$ ]). Statistical analysis was performed using Stata version 13 (StataCorp., College Station, TX, USA). Qualitative data analysis was performed in open and axial coding stages. The experts' comments were reviewed and imported into the qualitative software (MAXQDA 2010, <https://www.maxqda.com/>) for open and axial coding. The participants' key statements were identified, and open codes and codes with similar meanings were classified into subcategories. In axial coding, subcategories were grouped into categories based on the proximity of their purports. Two researchers coded each expert's comments to establish credibility of the coding and discussed any similarities and differences in the 2 resulting sets of codes. All coding and interpretations were discussed by the research team. Finally, the qualitative findings were reported.

## **Phase 2: Assessing the Validity of the Persian Version of the Tool**

Validation of the CR interview guide was conducted from January 2018 to February 2018 across the following steps:

#### **Step 1: adoption of the community readiness tool**

In this step, the adoption of a comprehensive CRT developed by Findholt [21] was performed. This tool was designed to assess CR related to childhood obesity prevention and was adapted from the CR interview questions proposed by the Tri-Ethnic Center's handbook. The CRT contains 35 questions across 6 CRM dimensions. The questions are divided into 2 parts, with one focusing on attitudes and efforts related to children's physical activity and the other focusing on children's diets.

#### **Step 2: linguistic validation**

The CRT was translated using standard forward and backward translation. The forward translation was performed by 2 native Persian speakers with sufficient proficiency in English and Persian. The final Persian version was then sent to 2 other translators to assess the translation quality, including the clarity of the text, conceptual equivalence, and standard language

usage. Back-translation was conducted by 2 independent bilingual (English/Persian) native English speakers. The back-translated version was then sent to the questionnaire developer (Supplemental Material 1).

The original developer confirmed the back-translated version of the CRT. Minor comments were provided about 5 questions, and 1 question was changed entirely (Supplemental Material 2).

#### **Step 3: modification of the interview guide**

To ensure the accuracy of the interview guide, the research team modified the approved translated interview guide based on the qualitative findings of the Delphi study. Therefore, the experts who participated in all rounds of the Delphi study were approached and explicitly asked to evaluate the qualitative results of the Delphi study and compare them to the approved translated interview guide in order to improve it according to their knowledge and the socio-cultural context of Iran.

#### **Step 4: content and face validity assessments**

A panel of 10 experts, including 4 nutritionists, 2 health education and promotion specialists, 2 sociologists, and 2 psychologists, were identified through purposive sampling to examine the content validity of the modified interview questions. The experts were asked to grade the relevancy of each question on a scale of 1 to 5 to calculate the content validity index (CVI) and content validity ratio (CVR) [27]. Given that interviews should be conducted within local communities, such as at elementary schools, students' homes, public health care centers, and municipal community centers, the face validity was determined based on interviews conducted at similar locations and with those who had similar characteristics to the key informants. Six interviewees were selected from primary schools for boys and girls, and 3 interviews were conducted at 2 public health-care centers and a municipal community center in Tehran.

## **Ethics Statement**

The study protocol was approved by the National Nutrition and Food Technology Research Institute (NNFTRI) Ethics Committee (IR.SBMU.NNFTRI.REC.1397.012). Personal information collected during the Delphi study and validation processes is stored securely in a locked cabinet. All methods were carried out following relevant guidelines and regulations. Informed written consent was requested and obtained from each participant.

## RESULTS

### Phase 1: Adapting the Model

#### The first Delphi round

Twenty-one experts participated in the first round of the Delphi study (response rate [RR], 81%). Four of the 6 CRM dimensions had strong necessity/appropriateness according to  $\geq 80\%$  of panelists. The “community knowledge about the issue” dimension received the highest consensus rating and was confirmed by 100% of participants. The “existing prevention efforts” dimension was confirmed by 90% of the Delphi panelists. Other dimensions, including “leadership” and “community climate,” were confirmed by 86% of the panelists. “Community

knowledge of the prevention efforts” and “available resources” received the lowest consensus ratings at 62% and 71%, respectively (Supplemental Material 3). Thus, the above-mentioned dimensions (without any changes) were sent to all experts who participated in round 1.

In terms of adequacy, 5 experts agreed with the current materials in the CRM and did not add additional perspectives or opinions to the model; however, the remaining 16 experts had different opinions regarding the adequacy of the model. In total, 54 initial codes were identified based on the experts’ opinions (Table 3). Similar meaning codes were grouped and classified into 5 subcategories. Through axial coding, the subcategories were then grouped into larger categories. Content analysis found

**Table 3.** Categorization of the qualitative findings of the Delphi study regarding the CRM dimensions

CRM dimensions	Categories	Open codes (experts’ comments)	
Existing prevention efforts	Community awareness and education Food industry improvement efforts	<ul style="list-style-type: none"> <li>- The wide range of interventions</li> <li>- Small but influential efforts</li> <li>- Taxation on unhealthy foods</li> <li>- Educational intervention</li> <li>- Family awareness of the child’s weight status</li> <li>- The knowledge of community members about the scientific definition of childhood obesity</li> <li>- Awareness of the effects of childhood obesity consequences in adulthood</li> <li>- Education on healthy food choices</li> <li>- Informal education</li> <li>- Virtual education</li> <li>- Influence of media education on individual behaviors</li> <li>- The effect of training and advertising in newspapers and magazines</li> <li>- Educational media</li> <li>- Targeted evaluation of interventions</li> </ul>	<ul style="list-style-type: none"> <li>- Mother’s knowledge of childhood obesity</li> <li>- Existing information and statistics</li> <li>- Changing the children’s food industry</li> <li>- Children’s food enrichment</li> <li>- Remove harmful fats from children’s food</li> <li>- Salt reduction</li> <li>- Remove added sugar from children’s food</li> <li>- Physical activity education</li> <li>- Education from early childhood</li> <li>- Limited access to unhealthy foods</li> </ul>
Leadership/available resources	Engaging key stakeholders Supply and management of resources	<ul style="list-style-type: none"> <li>- Attention to the community’s opinions on health planning</li> <li>- Leaders’ attention to stakeholders and the audience for making changes</li> <li>- Identification of the key stakeholders</li> <li>- Attention to the Ministry of Education</li> <li>- Attention to welfare organizations</li> <li>- Management of available resources</li> <li>- Attracting new resources and facilities</li> <li>- Management of individual readiness</li> <li>- Social capacities</li> <li>- Family participation</li> </ul>	<ul style="list-style-type: none"> <li>- High community participation</li> <li>- Previous experiences</li> <li>- Health-promoting schools</li> <li>- NGOs and scientific associations</li> <li>- Physical education teachers</li> <li>- Exercise spaces</li> <li>- The existence of information systems</li> <li>- The existence of an appropriate intervention system</li> </ul>
Community climate	Socio-cultural attitudes regarding childhood obesity	<ul style="list-style-type: none"> <li>- The sense of a need to address obesity in a community</li> <li>- People’s belief systems</li> <li>- The cultural dimension of childhood obesity</li> <li>- Misconceptions about childhood obesity</li> <li>- Considering obesity as a health factor</li> <li>- Incompatibility between researchers and ordinary citizens regarding perceptions and definitions related to childhood obesity</li> <li>- Feasibility of implementing interventions related to community status</li> <li>- Acceptance of interventions regarding environmental status</li> </ul>	<ul style="list-style-type: none"> <li>- The effect of environmental factors on individual and social behaviors</li> <li>- School climate</li> <li>- Family features</li> <li>- Community motivational factors for change</li> </ul>

CRM, community readiness model; NGO, non-governmental organization.



that the experts appended additional perspectives about the adequacy of the CRM when applied to the Iranian population. Education and intervention programs conducted in the public healthcare system and food industries to promote healthy lifestyle behaviors in children and general community members were repeatedly identified by the experts as helpful for assessing and improving community readiness. In addition, the role of influential community members and leaders in improving the social capacity, management, and attraction of resources was repeatedly identified as another important factor. Furthermore, socio-cultural attitudes regarding childhood obesity as an essential feature of readiness were emphasized in different ways by the experts. The 5 subcategories with relevant supporting quotes are presented below (Supplemental Material 4).

#### *Subcategory 1: community awareness and education*

The experts emphasized the importance of community awareness about childhood obesity and CR. Family awareness, especially the knowledge of the mother regarding their child's weight/health status, was repeatedly identified as an influential factor. Many experts believed that any education, including formal or informal, in-person or remote, and individual-based or group-based, can raise the community's readiness related to childhood obesity prevention programs. The experts agreed that the knowledge level of mothers, school personnel, and public healthcare personnel about the scientific definition of childhood obesity, the consequences of childhood obesity on mental and physical health in adulthood, health-related behaviors including healthy food choices, physical activity, sleep, and screen time can increase the perceived importance of childhood obesity as an issue and improve prevention efforts. In addition, several experts agreed that the implementation and evaluation of any intervention programs to prevent childhood obesity could efficiently improve CR.

#### *Subcategory 2: food industry improvement efforts*

Based on the experts' comments, attempts to modify manufactured food products for children would improve their health and prevent childhood obesity. In addition, several experts emphasized the critical role of taxation in improving CR and reducing families' unhealthy food consumption.

#### *Subcategory 3: engaging the key stakeholders*

Several of the experts believed engaging community stakeholders during the planning process to be one of the most

critical factors for improving the CR related to childhood obesity prevention. Multiple stakeholders, including the Ministry of Education, welfare organizations, non-governmental organizations, scientific associations, and health-promoting schools, were identified by the panelists. In addition, an expert in the field of nutrition identified the importance of considering stakeholders' opinions when planning childhood obesity programs.

#### *Subcategory 4: supply and management of resources*

The availability and management of resources and facilities were identified as leading factors that influenced CR related to childhood obesity prevention. The panelists identified several financial, environmental, and human resources as leading factors. In addition, multiple experts emphasized the importance of attracting new resources to increase CR related to childhood obesity prevention.

#### *Subcategory 5: the socio-cultural context*

Most of the experts emphasized the obvious incompatibility of perceptions and definitions between the general community and researchers and/or health personnel about childhood obesity, which can be confusing and should be considered in the model. The participants explained the prevailing attitudes of communities regarding childhood obesity in different ways by outlining common socio-cultural misconceptions. The experts explained that some community members regard childhood obesity as a sign of beauty, health, and/or economic well-being. In addition, several experts explained that most parents believed childhood obesity to be hereditary and that their children's weights would improve as they age. In addition, multiple experts stated that some mothers believe that feeding their children oils and butter would be beneficial for their growth and improve their strength. Several of the participants emphasized the attitude of communities toward childhood obesity programs as a determinant of CR. These participants believed that the views of communities regarding the need to address childhood obesity as an issue and their acceptance of childhood obesity prevention efforts as important should be considered in CR studies.

At the end of the first round of the Delphi panel, an in-depth assessment of the experts' opinions showed that, despite the various components suggested by experts, according to the definition and related descriptive items of the CRM dimensions, all identified categories and related themes could be classified

**Table 4.** Qualitative findings related to the expert consensus from the Delphi study

Open codes (experts' comments)	% Consensus		Median (P <sub>25</sub> , P <sub>75</sub> )	
	2nd round	3rd round	2nd round	3rd round
Incompatibility between researchers' and ordinary citizens' perceptions and definitions related to childhood obesity	68.00	81.00	4.00 (2,5)	4.00 (3,5)
Community motivational factors for change	74.00	86.00	4.00 (3,5)	5.00 (3,5)
Limited access to unhealthy foods	58.00	83.00	4.00 (3,4)	4.50 (3,5)
Competition for resources with related interventions	-	84.00	-	4.50 (3,5)
Developing supportive infrastructure for childhood obesity	-	87.00	-	5.00 (3,5)
Existing formal and informal health policies	-	84.00	-	4.00 (3,5)

in 1 of the 6 dimensions of the CRM (Table 3). This indicates that the panelists introduced no new dimensions in round 1.

### The second Delphi round

In the second round, the questionnaire results of both the first and second rounds as well as the overall results acquired from the first round were sent to the experts. Nineteen experts (RR, 73.0%) participated in round 2. Strong necessity/appropriateness was confirmed for the 2 remaining CRM dimensions by  $\geq 80\%$  of the panelists (Supplemental Material 3). Furthermore, the proper placement of all qualitative findings except for 3 initial codes was approved by  $\geq 80\%$  of the panelists (Table 4). The experts also agreed on the proper placement of the codes for which there was disagreement. Furthermore, only 2 experts expressed their opinions concerning the adequacy of the CRM dimensions, and 3 codes were extracted from their comments (Table 4).

### The third Delphi round

In round 3, third-round questionnaires as well as the questionnaire completed by each participant in the previous round and the overall findings were sent to all of the experts who participated in the second round. In the third round, 16 experts (RR, 61.5%) confirmed the placement of 3 new extracted codes and 3 remaining codes (Table 4), and no new comments were shared. At the end of the Delphi study, the experts confirmed the socio-cultural necessity/appropriateness and the adequacy of the CRM dimensions.

## Phase 2: Validity of the Relevant Tool Modification of the interview guide

Nine of 16 experts who participated in all 3 rounds of the Delphi study explained their opinions about the qualitative findings of the Delphi study (RR, 56.2%). Two codes, which in-

cluded "misconceptions about childhood obesity" and "acceptance of intervention regarding the environmental status" (Table 3), were emphasized by almost all of the experts as critical factors to include in the interview guide. Finally, considering the experts' comments, the research team formulated 2 more questions, which included the "socio-cultural dimension of childhood obesity" and "social acceptability of childhood obesity prevention efforts," and added them to the community climate dimension of the Persian version of the interview guide. Therefore, the finalized Persian version of the CRT included 37 questions on 6 CRM dimensions (Supplemental Material 5).

### Content and face validation

All questions had an acceptable level of content validity, and satisfactory results were found for the CVR and CVI (0.87 and 0.92, respectively). The respondents did not encounter any complex or ambiguous questions regarding face validity. Most interview questions were generally easy to read and comprehend for the interviewees except for a few words that were changed to meet the participants' considerations. For instance, "leaders" was replaced with "appointed leaders and influential community members," "local data" with "information and statistics," and "formal and informal laws" with "written and non-written laws and policies."

## DISCUSSION

Our findings identified the overall necessity/appropriateness and adequacy of the CRM dimensions to assess CR related to childhood obesity prevention in Iran. In addition, this study devised and validated a CRT for childhood obesity prevention programs in Iran. This study is the first to evaluate the compatibility of the CRM in a country with many diverse cultures and develop a Persian-specific CRT for childhood obesity

prevention programs that can be used in relevant studies/programs in Iran.

Several studies have used the Delphi method to determine a consensus on specific issues. A consensus understanding of the readiness concept within a Korean social context was acquired using the Delphi process [28]. Furthermore, the essential subcomponents of organizational readiness for innovation were obtained using the Delphi method [29]. In addition, the Delphi method was used to develop and validate a survey for assessing CR related to the health and wellness of a college campus community [30].

Our results from the first Delphi round showed that 2 dimensions related to community knowledge and awareness had contradictory results. Specifically, “community knowledge of the issue” and the “community knowledge of efforts” received the highest and lowest confirmation ratings, respectively. However, the “community knowledge of efforts” dimension was confirmed in previous studies. In line with the present findings, community knowledge about childhood obesity has been emphasized in several studies investigating prevention and control efforts in an Iranian context [31,32]. Providing educational materials; increasing public knowledge; and awareness about childhood obesity’s causes, consequences, and healthy/unhealthy behaviors are repeatedly emphasized in the Iran-Ending Childhood Obesity program, which is the only national program for preventing childhood obesity in Iran [30]. In addition, similar to the findings of other studies, this study found the community knowledge of current programs and activities to be essential when assessing readiness related to childhood obesity-focused efforts, and the absence of community knowledge about the existence, accessibility, and effectiveness of preventive strategies is the main barrier to the active involvement of communities [8,25,32].

In the first round of the Delphi study, the experts confirmed the overall necessity/appropriateness of the 3 dimensions, including existing community efforts, leadership, and the community climate. Consistent with these results, preventive actions, community values, prevailing norms, and active and supportive leaders who can facilitate change have been identified as essential elements of readiness [6,25]. Several studies in Iran showed similar findings to our study by identifying behavioral, structural, and socio-cultural factors as important causes of childhood obesity [33,34]. Furthermore, confirmation of the resources dimension in the second Delphi round was consistent with the findings of other studies that showed

that the supply, accessibility, and management of resources are integral components when developing community-based programs to prevent childhood obesity [35].

The CVI and CVR were used in the current study for content assessment of the modified interview guide. The CVR measures the essentiality of each question using Lawshe scores. In addition, the CVI is the most commonly used approach for quantitative content assessment in instrument development and is determined by asking the respondents to grade the relevancy, clarity, and simplicity of each question from the experts’ perspectives [27]. In this study, 2 critical factors were identified based on the perspectives of experts. Therefore, 2 additional questions were added to the community climate dimension of the interview guide to address these factors since community climate is the main domain that reflects the social and cultural components of readiness. The first question examined the “socio-cultural dimension of childhood obesity.” The qualitative findings of the current study, which were consistent with the findings of other studies, confirmed that the conventional notion of “bigger is better” has evolved. Today, an obese child is not likely to be considered healthy [35]. Misconceptions about overweight and obesity as significant, influential factors in the nutrition and physical activity of children are still relatively common among some parents [36]. The second question assessed acceptability as a prerequisite for the effectiveness of preventive efforts. While definitions of acceptability vary considerably, the research team defined it as social acceptability [37]. Therefore, acceptability was defined as the extent to which people providing or using healthcare services or preventive strategies consider them appropriate based on their anticipated or actual responses to an intervention [38].

The CRT is an efficient method for evaluating the CR for specific issues or programs as well as identifying which dimensions should be further developed or funded to successfully implement the planned program in specific communities [8,39]. In addition, the CRT can help identify a community’s weaknesses and strengths and the obstacles that are likely to be met [8]. Multiple studies have assessed CR before and after the implementation of an intervention program to measure its success [15,40]. In addition, evidence-based planning should be undertaken to devise specific strategies and actions before the implementation of interventions [10].

The current study is the first to adopt the CRM and validate a CRT for the implementation of childhood obesity prevention programs in Iran, which is a Middle Eastern country. However,



this study had certain limitations. The Delphi study panelists' insufficient awareness of the concepts of readiness and the CRM was one of the main challenges in this study. This was partially mitigated, however, by explaining the model and presenting the CRM handbook to the experts. Furthermore, the purposive selection of eligible members for the Delphi panel could have increased the possibility of selection bias; however, this was minimized by recruiting a combination of individuals with multiple specialties across heterogeneous groups.

In conclusion, the present study developed and assessed a CRT that can be used in childhood obesity prevention programs and studies in an Iranian context. The results highlight the importance of readiness as a socially and culturally constructed concept that should be understood within a cultural context. The validated CRT can be used to explore the readiness of urban populations in Iran to implement more effective childhood obesity prevention programs.

## SUPPLEMENTAL MATERIALS

Supplemental materials are available at <https://doi.org/10.3961/jpmp.22.409>.

## CONFLICT OF INTEREST

The authors have no conflicts of interest associated with the material presented in this paper.

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## AUTHOR CONTRIBUTIONS

Conceptualization: Niknam M, Omidvar N, Amiri P, Eini-Zinab H, Kalantari N. Data curation: Niknam M, Omidvar N, Amiri P. Formal analysis: Niknam M, Amiri P, Eini-Zinab H.

Funding acquisition: Omidvar N. Methodology: Niknam M, Omidvar N, Amiri P, Eini-Zinab H. Project administration: Omidvar N. Visualization: Niknam M, Omidvar N, Amiri P. Writing – original draft: Niknam M. Writing – review & editing: Niknam M, Omidvar N, Amiri P, Eini-Zinab H, Kalantari N.

## ORCID

Mahdieh Niknam <https://orcid.org/0000-0001-6694-204X>  
Nasrin Omidvar <https://orcid.org/0000-0002-4061-0562>  
Parisa Amiri <https://orcid.org/0000-0002-6693-1057>  
Hassan Eini-Zinab <https://orcid.org/0000-0002-6895-034X>  
Naser Kalantari <https://orcid.org/0000-0002-8919-4803>

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