



Cognitive Interviews for Validating the Family Nutrition Physical Activity Instrument for Korean-American Families With Young Children



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ABSTRACT

Purpose: Childhood obesity is a growing health concern for Korean-Americans (KA). The purpose of this study was to develop a culturally appropriate Korean-language version of the Family Nutrition Physical Activity (FNPA) instrument and evaluate its comprehensibility and cultural appropriateness of the FNPA for KAs.

Design and Methods: The FNPA was translated into Korean and cognitive interviews were conducted with 19 KA mothers in the Chicago metropolitan area.

Results: Overall, participants reported that the FNPA is easy to understand and said they had no difficulty answering items using a 4-point Likert scale. Six out of 20 items had minor revisions due to: items that were not specific enough, had confusing wording, or led to incorrect interpretations.

Conclusions: Cognitive interviews confirmed the cultural appropriateness of the translated FNPA in the KA context. It is crucial that child's age and cultural aspects of a child's household routines should be taken into consideration when the original FNPA is being used with culturally diverse populations.

Practice Implications: Health care professionals may use the FNPA when assessing family environment in their efforts to prevent and control childhood obesity among KAs.

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One-third of youth (31.8%) aged 2 to 19 years are overweight or obese in the United States (U.S.) (Ogden, Carroll, Kit, & Flegal, 2014). A nationally representative study estimated that 26% of Asian-American children were overweight or obese (Jain et al., 2012). Asian-Americans have a lower prevalence of obesity compared to other ethnic groups, but they may develop chronic diseases at a lower body mass index (BMI) than non-Hispanic Whites due to greater tendency toward abdominal obesity (Cho & Juon, 2006).

Childhood obesity is significantly associated with a high risk of developing chronic diseases, including diabetes, cardiovascular disease, and cancer (CDC, 2016). Children have a higher risk of developing overweight and obesity if they are physically inactive, take in excessive calories, have increased screen time, and lack sleep (Jones, Fiese, & the STRONG Kids Team, 2014; McDonald et al., 2015). These contributing factors are not simply individual choice: they are often part of household routines. Recently researchers have emphasized the importance of protective household routines in preventing and decreasing childhood overweight and obesity (Jones, Fiese, & the STRONG Kids Team, 2014). Anderson and Whitaker (2010) reported that preschoolers with protective household routines, including family dinner, adequate

nighttime sleep, and limited screen viewing time, exhibit lower obesity rates. A home-based randomized trial demonstrated that improving household routines is effective in decreasing children's BMI (Haines et al., 2013).

Household routines are shaped within a family environment and can be changed by means of parental modeling and modification of lifestyles by family members. The family is the proximal environment for children, so the influence of the family is crucial to healthy child development, including healthy eating, sufficient exercise, and weight management (Sousa, 2009). The familial approach to obesity prevention and control emphasizes the importance of providing healthy home environments and family behaviors (Golan & Weizman, 2001). In addition, interventions within a family obesogenic environment yield higher success rates in childhood obesity control and prevention than interventions focused on environmental changes outside the home (Haines et al., 2013; Penney, Almiron-Roig, Shearer, McIsaac, & Kirk, 2014). Therefore, identification of obesity risk factors within a shared family environment is necessary in order to provide successful intervention for obese preschool-age children (Kitzman-Ulrich et al., 2010).

The Family Nutrition Physical Activity (FNPA) instrument is a screening tool used to assess family environmental and behavioral factors that may increase the risk of childhood obesity (Ihmels, Welk, Eisenmann, & Nusser, 2009). This instrument is easy to use and includes only 20 questions; its reliability and validity have been confirmed in

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previous studies. (Ihmels, Welk, Eisenmann, & Nusser, 2009; Ihmels, Welk, Eisenmann, Nusser, & Myers, 2009). The original version of the FNPA can be found at www.myfnpa.org.

Several studies used the FNPA in identifying family obesogenic environments and suggested that FNPA can be utilized to predict child's obesity risk (Christison et al., 2014; James, Matsangas, & Connelly, 2014). Yee, Eisenmann, Carlson, and Pfeiffer (2011) reported that the FNPA can be used as an important screening tool because it is significantly related to risk of cardiovascular disease factors among children. However, most studies were conducted for non-Hispanic White school-aged children. Thus, further study is needed to validate the utility of the FNPA with other racial/ethnic groups, such as Korean-Americans.

Immigrants' health and lifestyles differ from those of people who live within their country of origin as well as their current country of residence, and these differences may influence the health of preschool-age children (Lee, Sobal, & Frongillo, 2000). Similarly, research has shown that a family's culture and traditions has an impact on family household routines and aspects of the home environment that may affect childhood obesity (Johnson, Welk, Saint-Maurice, & Ihmels, 2012). Kumanyika (2008) has reported that parents' inclination to provide healthful foods for children is influenced by cultural attitudes. In addition, family eating habits gradually change as part of the adjustment to U.S. culture, and this change can have an impact on children's health (Lu, Diep, & McKyer, 2015; Perreira & Ornelas, 2011).

Regardless of years lived in the U.S., KAs tend to maintain their traditional cultural values, customs, and language: eating Korean food, using Korean language media, and participating in Korean community and business organizations (Kim & Wolpin, 2008; Lee, 1995). KAs stress family cohesion, and a strong sense of family obligation continues to be reinforced for the children as they grow older (McAdoo, Martinez, & Hughes, 2005). KA families also typically have a stable family structure: more than half (67%) of KA families have children and most families (80%) include a married couple (Min & Kim, 2012). Studies have examined KAs' health-related behaviors. A study by Hofstetter, Irvin, Schmitz, et al. (2008) reported that Koreans living in California walk less for exercise than the national average. In addition, acculturated Korean-Americans eat snacks and eat out more frequently than less acculturated KAs (Lee, 2008). These KA family behaviors may influence the household routines and home environments that increase the rates of overweight and obesity among KA children. Studies report that approximately one fifth of KA children (18–20%) are overweight or obese (Asian and Pacific Islander American Health Forum, 2016; Jain et al., 2012). However, little is known about the KA family obesogenic environment. There is no validated structured instrument that can easily measure KA family's household routines and home environment related to childhood obesity. Cultural issues related to the adaptation of instruments that measure family obesogenic environments for KAs need to be addressed (Pai, Lee, & Chang, 2011). The purpose of this study was to develop a Korean version of the FNPA instrument, to evaluate its comprehensibility and cultural appropriateness, and to assess the content validity of the FNPA for KAs.

Methods

Design

This qualitative study used cognitive interviews to obtain the responses from parents regarding survey questionnaire items to establish the content validity necessary in developing and revising a new instrument (Polit & Beck, 2006). The cognitive interview, which is based on cognitive theory, is a way of assessing respondents' understanding of questionnaire items to improve a questionnaire's reliability and content validity prior to its distribution to research subjects (Collins, 2003; Knafel et al., 2007). In addition, cognitive interviews have been used when developing culturally appropriate health surveys for target populations. Problems that may be identified include the suitability of questions

and the meaning of translated items for respondents from different ethnic groups (Drennan, 2003). There are two types of cognitive interviews: *think aloud* and *verbal probing*. *Think aloud* is useful in asking respondents to verbalize their thoughts while answering questionnaire items, whereas *verbal probing* is used to identify confusingly worded or ambiguous questions (Knafel et al., 2007). To determine comprehensibility and appropriateness of the FNPA, the *Think aloud* method was used for cognitive interviews in this study, followed by *verbal probing* if confusing items were identified.

Setting and Sample

The cognitive interview participants were 19 KA mothers recruited from three KA churches and one preschool in the Chicago metropolitan area. The inclusion criteria for all participants were as follows: (1) self-identify as KA (first-generation KAs who were born in Korea and immigrated to the U.S.), (2) lived in the U.S. at least 5 years, and (3) mothers who live with their 2- to 5-year-old child.

Participants of cognitive interviews were relatively homogeneous: all 19 participants were born in Korea and were married. The mean age of the mothers was 38 years old (range 31–44 years), and the average number of years in the U.S. was 15 (range 6–34 years). The mean age of the children was 51 months (range 24–59 months). Over half of the interviewees (55.8%) were currently working outside the home, 29.8% had earned a master's degree or higher, and 43.5% had a family household income of more than \$75,000 per year.

Measures

In developing the FNPA, Ihmels, Welk, Eisenmann, Nusser, and Myers (2009) identified 10 main family environment factors associated with overweight and obesity: (1) family meal patterns, (2) family eating habits, (3) food choices, (4) beverage choices, (5) restriction/reward, (6) screen time behavior and monitoring, (7) healthy environment, (8) family activity involvement, (9) child activity involvement, and (10) family routine. Two items were asked for each of the 10 factors.

The original FNPA contains 20 items and uses a 4-point Likert scale (1 = almost never, 2 = sometimes, 3 = usually, and 4 = almost always; possible total score ranges from 20 to 80.). There are six negatively stated items (3, 4, 5, 7, 10, and 13) for which the scores need to be reverse coded. A higher score on the FNPA implies a less obesogenic environment. The reliability of the FNPA was established in previous studies; the Cronbach's alpha ranged from 0.72 to 0.81 (Ihmels, Welk, Eisenmann & Nusser, 2009; James et al., 2014). In addition, the FNPA's construct validity and predictive validity were supported in a longitudinal study (Ihmels, Welk, Eisenmann, Nusser, & Myers, 2009).

Procedures

Guided by Classical Test Theory (Devellis, 2006), the study was conducted in several steps. First, the FNPA was translated from English to Korean. Next, cognitive interviews with KA mothers were conducted to assess the items for comprehensibility and cultural appropriateness. Items were revised as needed, based on analysis of the qualitative data generated by the cognitive interviews.

We obtained study approval from the Institutional Review Board of the University prior to participant recruitment and data collection. The first author explained the study purpose, procedures, benefits, and risks of the study to the participants at the beginning of the cognitive interviews. Participants were told that their participation was voluntary and the information would be kept confidential. Their signed informed consent was obtained, and each participant was given a gift card (\$10) as compensation for their time and effort. The first author and a trained RA conducted each cognitive interview.

A parallel blind technique was used to translate the FNPA into Korean. This approach encourages open discussion among the translators

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