

# “If my family is happy, then I am happy”: Quality-of-life determinants of parents of school-age children

SAGE Open Medicine

Volume 7: 1–9

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DOI: 10.1177/2050312119828535

journals.sagepub.com/home/smo



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## Abstract

**Objective:** Obesity is a public health concern for children and adults and effective obesity prevention programming is needed urgently. The effectiveness of health-related messaging and interventions is influenced by the way content is framed. HomeStyles is an obesity prevention program, which aims to promote health through the frame of improved quality of life.

**Methods:** Thus, focus groups were conducted with English- and Spanish-speaking parents of school-aged children (ages 6–11) to identify key quality-of-life determinants as described by parents.

**Results:** Parents (n = 158) reported that their quality of life was influenced by family happiness and parent and child health (e.g. adequate sleep, exercise, healthy diet). Many parents expressed that their busy schedules and lack of family time were detrimental to their quality of life. Work–life balance and financial stability were other factors commonly noted to impact quality of life. Spanish-speaking parents also reported being undocumented and feeling a lack of a sense of community negatively influenced their quality of life.

**Conclusion:** Considering parent-defined quality-of-life determinants when framing health-related messaging and developing interventions may increase participant interest and ultimately improve health-related behaviors. Next steps in the HomeStyles project include using parent-reported quality-of-life determinants to guide the development of intervention materials.

## Keywords

Parents, child, quality of life, Hispanic Americans, focus groups

Date received: 5 October 2018; accepted: 14 January 2019

## Introduction

Obesity is a public health concern for children and adults alike. In the United States, one-fifth of school-aged children (ages 6–11 years) are classified as obese (body mass index (BMI) for age  $\geq$  95th percentile).<sup>1</sup> Overweight and obesity pose many physical and mental health risks. For instance, overweight kids have poorer mental and physical health than their normal-weight counterparts.<sup>2–4</sup> Overweight children are also likely to grow up to be overweight adolescents and adults.<sup>5</sup> Expanded obesity prevention programming is urgently and profoundly needed to attenuate obesity rates.

HomeStyles is a two-stage (1—families with preschool children; 2—families with school-age children) childhood obesity prevention program designed to enable and motivate parents to shape their home environments and weight-related lifestyle practices to support optimal child growth while also reducing the risk of childhood obesity. This program recognizes parents as key influencers who create the overall

structure/lifestyle of the home environment. Indeed, as role models and gatekeepers, parents strongly influence children’s weight-related behaviors<sup>6–9</sup> and thus have a fundamental role in safeguarding child health by cultivating obesity-preventive home environments and lifestyle habits.<sup>10–14</sup>

Research on the effectiveness of public service announcements and anti-tobacco advertisements has shown that the message content and emotions evoked by advertisements

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influence their ability to elicit behavior.<sup>15,16</sup> Research has also shown that the effectiveness of health-related interventions is influenced by how the content is framed.<sup>17</sup> Therefore, to increase the relevance and resonance, and thus the effectiveness, of the program, HomeStyles frames childhood obesity prevention strategies in a manner that is responsive to parent-defined quality-of-life (QOL) priorities. The concept of “quality of life” incorporates an individual’s personal view of factors that positively and negatively affect life and the degree to which the individual feels personal needs are being satisfied and he or she is able to pursue happiness and fulfillment.<sup>18</sup>

The PRECEDE-PROCEED health program planning model provides the framework for HomeStyles’ development, implementation, and evaluation process. This community-based participatory research model was selected because it aims to promote health as a means for achieving improved QOL as the goal.<sup>19–21</sup> Furthermore, this model increases the likelihood of program effectiveness by assuring that the broad array of factors affecting the target audience’s health behaviors is considered.<sup>19–23</sup>

The PRECEDE portion of the model guides the development of HomeStyles. The four planning activities of PRECEDE include elucidating the *Predisposing*, *Reinforcing*, and *Enabling* factors associated with performance of behavior and initial *Evaluation* activities to identify behavior change stimuli. The PROCEED portion of the model guides the program implementation and evaluation phases. The first step in PRECEDE, the focus of this article, is to describe the factors affecting QOL as defined by the target audience.

Individuals often are not motivated to change behaviors simply to improve health; the real driving forces of change are improving factors that bolster overall life satisfaction.<sup>24</sup> Thus, elucidating the factors affecting the target audience’s QOL yields insights into probable motivators educators can harness to promote behavior change.<sup>19</sup> Little is published with regard to the QOL determinants of parents of school-age children. Yet, their role in establishing home environments and family lifestyles and serving as family gatekeepers, the impact parents can have with regard to family weight-related behaviors (e.g. foods available, screentime limits) makes it imperative to elucidate their QOL determinants in order to frame health-related messaging in a manner that is likely to encourage behavior change. Thus, to address research gaps and facilitate development of stage 2 of the HomeStyles program, the aim of this study was to determine the factors affecting the QOL of parents of school-age children, the target audience of stage 2 of HomeStyles, and subsequently apply findings to educational materials for this audience.

## Methods

The Institutional Review Boards for Protection of Human Subjects at the authors’ universities approved this investigation. Participants gave written informed consent.

## Sample

Parents with at least one school-age child (6–11 years) residing in Florida (FL), West Virginia (WV), or New Jersey (NJ) and who spoke either English or Spanish were recruited to participate in a 60-min focus group addressing small, easy changes they could make to their homes and lifestyles to help kids grow up even healthier. Recruitment announcements were distributed electronically (email, websites) and as printed flyers in a wide array of community sites. Parents were paid \$25 for taking part in a focus group.

## Instruments

Parents completed a brief form gathering demographic information (e.g. age, education level, children’s ages) prior to the focus group. The semi-structured focus group guides were developed using standard procedures.<sup>25,26</sup> During the first half of the focus group, parents discussed QOL factors. The QOL aspect of the PRECEDE-PROCEED model provided the framework for focus groups, which aimed to explore factors affecting parents’ QOL and those that could improve it. In the second half of the focus group, parents discussed one or two topics related to lifestyle practices (e.g. family mealtime behaviors, fruit/vegetable intake, screentime usage). This article reports the QOL data only, with the goal of informing the development of a variety of health-related interventions. Results from the health-related topics portions of the discussion are reported elsewhere.<sup>27–30</sup>

All researchers conducting the focus groups completed formal training and practice sessions to ensure that data were collected in a consistent manner by all researchers at all data collection sites. Focus groups were led by a trained moderator, conducted in the primary language of the parents (i.e. English or Spanish), and held in a variety of community settings. A second trained researcher took extensive notes of the focus group discussion and transcribed them within 48 h. The researcher who moderated the focus group appraised the notes for precision, completeness, and authenticity. Notes taken during Spanish-language focus groups were translated into English by the researchers leading and recording notes of the focus groups. Researchers conducting each focus group conferred to discuss the notes and refine them.

## Data analysis

Descriptive statistics were computed using SPSS version 21.0 (Chicago, IL). A team of three researchers trained in standard content analysis procedures independently analyzed the focus group data to identify trends.<sup>31,32</sup> Standard procedures produce systematic, objective descriptions of qualitative data trends.<sup>33</sup> Researchers discussed their individual content analyses to reach common agreement. Focus group data were analyzed throughout the data collection period with new results continuously compared to the

**Table 1.** Determinants of life satisfaction: themes from focus group discussions with parents of school-age children (n = 185).

Determinants of life satisfaction: themes from focus group discussions with parents

*Factors affecting parents' QOL*

## Factors having a positive effect on QOL

- Family happiness and cohesion
- Parent health
- Family time
- Work–life balance
- Parent leisure time away from kids
- Parent time with spouse
- Job security
- Financial security
- Faith/spirituality
- Community support

## Factors having a negative effect on QOL

- Family conflict
- Poor child health
- Busy schedules
- Being undocumented

QOL: quality of life.

previously collected data with the goal of determining when data saturation occurred and data collection could cease.<sup>31,34</sup>

## Results

Parents (N = 185) participated in 1 of 65 focus group discussions. Participants were mostly female (95%) and had at least some college education (77%). Parents were  $38.24 \pm 5.62$  SD years old and had  $2.45 \pm 0.99$  SD children under the age of 18 living in their homes. More parents participated in English-language focus groups than Spanish-language focus groups (68% and 32%, respectively). Participants were distributed fairly similar across states (n = 66 FL, n = 59 NJ, n = 60 WV). There were few differences between the two language groups; those that emerged are described below. The key life satisfaction determinants are presented in Table 1.

### Major factors affecting parents' QOL

When asked to identify the factors most important in determining how happy they feel, parents agreed that one of the main determinants was “family happiness—if my family is happy, then I am happy.” Family cohesion (“having love in my family”) and “lacking of conflict across the board” were key to their contentment—acknowledging that they wanted to live in a “happy family environment” with “family connections and support” that kept the family “united in the good and bad times.”

Parents understood that conflict—like “when kids are bickering at one another” or “when you and your spouse have

problems and are fighting”—can cause chaos and “stress in a marriage” and divorce that interfered with the happiness of the entire family. One commented, “If my family isn’t stressed, then I’m not stressed. But, if they’re all stressed, then I have to manage their stress.” Parents recognized that “stress is not good, it will affect everything; there is such an important role that stress plays on your health.”

Health was also a primary determinant of parents' QOL. Parents indicated that having “good health is number one” (e.g. “(adequate) sleep,” “eating good food,” “exercising,” “how much water I drink”). Personal good health was important because it helped them “take care of my family and make sure I am there for them.” Parents also noted that family health affected their QOL because “when someone [in the family] gets sick—that impacts the day-to-day” and that “nothing affects me more than when my children are sick.”

“Time is a big factor” that affected parents' satisfaction with life. “Spending quality time with my family” “is more important than anything else” because “family is important to me.” Many felt that there is “never enough time in the day” and that they were “always rushing through day-to-day life” because of “busy and hectic schedules” and “need[ing] to manage my own schedule and my kids' schedules.” An important contributor to time stress was children's activity schedules, which “can be very challenging to manage” especially because parents are “transporting kids to activities.” In addition, parents indicated that their own employment contributed to time scarcity because there is “never enough time between working full-time and three kids.” To have more time, some parents wished to “be in a position where I can work part-time and spend more time with my kids.”

English-speaking parents also cited the importance of having time away from their children: “something other than your family, like a career” and being around other adults outside the family, commenting “I need to be around people older than 18” and have a “connection and relationship to other people.” Having time for their spouse was also important, with parents remarking that they “want to be involved with the kids without sacrificing time with my spouse.” In addition, parents' happiness depended on having personal “me” time so that they had “time to pursue passions and be connected to people” and “freedom to do outside things that I enjoy—sometimes that gets put on the back burner to make the family happy.” To feel fulfilled, parents also wanted personal “time to develop goals and motivation” so that they could “better [themselves] and work toward goals.” Personal time was also desired to enable participation in “self-care” like “exercising,” for “rest and quiet time,” and to have “time to myself to relax and decompress.”

Having consistent employment and job security was a significant contributor to parents' satisfaction with life because it meant that they were “able to provide for them [family]” and “maintain ourselves.” The desire to “feel secure financially” was common. “Financial stability is important because there is more stress when the money is

**Table 2.** Suggested methods to address QOL through health interventions.

Factors affecting parents' QOL	Potential methods to improve QOL
<i>Factors having a positive effect on QOL</i>	
Family happiness and cohesion	Highlight the ability of health behaviors, such as parent–child co-play and family meals, to strengthen family bonds
Parent and child health	Expand parent outcome expectations of healthy eating and physical activity to include improved (immune status) child health status and illness resistance
Family time	Frame healthy behaviors, such as family meals, as a way to involve kids in food preparation and increase time together as a family
Work–life balance	Build flexibility into interventions (e.g. make it online, brief) to help parents incorporate participation into their busy schedules
Parent leisure time away from kids/parent time with spouse	Offer time-saving strategies that both improve health and allow parents to have more personal leisure time, such as planning and preparing meals in advance. Promote intervention as a way to increase family time
Job security/financial security	Provide tips for healthy eating on a budget or suggest free or low-cost ways families can be physically active together
Community support	Instill a sense of community by holding group classes or creating a social media page for the intervention

QOL: quality of life.

tighter.” Having employment meant that parents were “able to provide for them [family],” “get bills paid,” “afford what we need,” and save for “retirement.” Parents also felt that “there is never enough money to do everything you want to do” and afford all the things they wanted kids to have (e.g. kids’ participation in “sports gets expensive”).

Sufficient, steady income was important; however, parents’ work responsibilities presented other challenges. Many realized that it was important to “not stress about work,” “separate work from home life,” and “balance my family and career,” but found it difficult because they had set themselves “high expectations at work and home—when expectations aren’t met, then life starts to unravel.” In addition, parents were concerned about “not being in control of children’s care during the day.”

Some Spanish-speaking parents reported that “The major factor that affects us is being undocumented; this is one of the largest barriers that we encounter. We can’t get better jobs, we can’t visit our family in Mexico—it affects everything.” “When we think about going to visit family, we aren’t able to. I think to myself, what I am going to do?” Parents also commented that being undocumented “is one of our battles” and that “there isn’t anything that affects us more.”

Some parents also indicated that “faith” and “spirituality” were significant contributors to their happiness. A few reported that feelings of self-worth played a role in their satisfaction with life (“if I feel like I am making a difference in the world”).

An array of factors were mentioned as hindering parents’ QOL. These included education (“not being able to go to university”), timing of parenthood (“having kids at a young age really affected my life”), criminal record, and appearance choices (“I have tattoos and I know I am stereotyped”). Other barriers to happiness named were time-use decisions

(“I spend too much time on social media”), “laziness” and lack of motivation, “emotional instability,” “bad friendships” and “toxic relationships,” and parenting practices (“I’m not able to tell my kids ‘no’”). Some Spanish-speaking parents reported their inability to speak English well and unrest in their country of origin interfered with life satisfaction.

### *Factors that could improve parents’ QOL*

To improve their QOL, parents wanted more financial stability so that they “don’t [have] to worry about how to pay for different things.” Parents also wanted to be able to “work less and be home more” so they could “spend more time with [their] family.” Parents acknowledged that having better “time management,” “a schedule,” “a good routine,” and “organization” could also help them find more time to spend with their families and improve family “harmony” (Table 2).

Parents felt that their quality of lives would improve if family members had “better relationships with each other.” One relationship-building strategy offered was family playtime:

We play all the time. It’s time for my kids. It has made my kids happier and my life happier. It is something I learned in my second marriage—in my first marriage, we didn’t play as much with the kids. Playing with them makes my life happier.

Parents also observed that proactively protecting family health could enhance QOL. For example, taking time to “provide a healthy meal” would help because “if we had better eating, it would improve our lives.” Other health-promoting strategies parents thought would improve life satisfaction were having a “bedtime routine,” being physically active, and limiting electronic device use (“the kids become so



absorbed in electronics, they don't do anything else"). Psychological health was also cited as a means for improving QOL ("As a mom, you put yourself on the back burner; but I need to make sure I take care of myself as well. I need to get back to putting myself as a priority because I will be no good to anyone if I am not around").

Adjusting their overall mind-set was also cited as a way to boost contentment with life, for example, "simplifying," "slowing down," "being more intentional about the things that really matter and not being distracted," and "lowering expectations about having to be the perfect parent and wife." Acceptance was also part of the mind-set shift with parents who believed it would help "find happiness where you are" and "making what we have work."

A few Spanish-speaking parents indicated that greater community support would improve their life satisfaction. They noted that in their country of origin, "the community is more unified. There is more essence of community" and that "here, you don't know your neighbor."

## Discussion

The aim of this study was to identify the QOL determinants of parents of school-age children with the goal of understanding how best to frame health-related messaging to encourage behavior change. The discussion below describes how these findings can be used to inform future obesity prevention programs.

Parents reported that family dynamics had an impact on their QOL, stressing the importance of family members getting along and minimizing conflict. Others have reported similar findings and also identified family interactions including the time spent together, communication, love, and support as the factors influencing the QOL of parents of children with and without disabilities.<sup>35,36</sup> Previous interventions aiming to change health behavior have been successful at incorporating parental perceived determinants of happiness (i.e. stronger family bonds) into their materials as a strategy for promoting behavior change.<sup>37,38</sup> For example, Ho et al.<sup>39</sup> designed an intervention that promoted preparing and eating meals as a family as a way to improve family communication and bonding and successfully improved family health and happiness. In addition, parents identify family bonding to be a potential benefit of parent:child co-play, suggesting the potential of highlighting the family-strengthening benefits of co-physical activity in addition to its benefits to physical health.<sup>40</sup>

Managing parent work schedules along with children's school and activity schedules was stressful for some parents who wanted a better sense of work-life balance. The desire for work-life balance is a transcultural desire; individuals who are satisfied with their work-life balance are less anxious and are less likely to be depressed while also being more satisfied with their job.<sup>41</sup> Over half of working mothers and fathers report finding it difficult to balance work life and

family life.<sup>42</sup> In addition to reducing time with family and direct supervision of children, work schedules can also negatively affect children's health behaviors.<sup>43,44</sup> For example, nonstandard work schedules (i.e. night or evening shift work) are particularly important to consider given their links to children's greater risk of depression and likelihood of engaging in risky behaviors (i.e. drug use, underage drinking, sexual promiscuity).<sup>43</sup> Behavior change interventions that communicate benefits beyond improved health, such as increased family time (i.e. getting kids involved in meal preparation), could increase parent interest and engagement and thus the effectiveness of the health intervention.<sup>45</sup>

Some employers who have recognized the importance of promoting work-life balance have implemented supportive programs to foster better work-life balance for employees.<sup>46,47</sup> The main constructs of these programs include emotional support (i.e. being aware of how work responsibility may affect family life, sympathy for the challenge of balancing work and family life), role modeling (i.e. sharing tips and strategies that have helped others balance work and family life), instrumental support (i.e. allowing flexibility in work schedules and offering services that assist employees in work-family balance), and creative work-family management (i.e. adapting workplace culture to better integrate work and family responsibilities).<sup>48</sup> The moderate success of these programs<sup>46,47</sup> suggests that incorporating their constructs in health and nutrition interventions could also address work-life balance QOL needs within the context of the intervention goals. For instance, if parents feel unable to find time or energy to provide frequent family meals or opportunities to be physically active with their children, teaching parents how these activities contribute to their work-life balance could enhance the attractiveness of the intervention and boost intervention recruitment and retention efforts. In addition, creating a program that is flexible and allows parents to fit it in around their busy schedule may be beneficial.<sup>49</sup>

Incorporating stress management tips related to the behaviors promoted in health programs can also address life-balance goals. A study of working mothers found a negative association between income and hair cortisol (a stress hormone) suggesting that low-income mothers experience greater levels of stress.<sup>50</sup> Mindfulness techniques, particularly in relation to mindful eating incorporated into nutrition interventions, have significantly improved maternal stress levels.<sup>51</sup>

Related to work-life balance, parents felt that financial stability was another important factor influencing their QOL, and although parents wished to be able to work less, they indicated that working fewer hours was not feasible as their family relied on their income to pay bills and afford the things they want and need. A study of parents of 4- to 18-year-old children showed that parents are interested in health interventions that consider families' tight budgets.<sup>49</sup> Although health education programs may not be able to

increase income directly, there are many opportunities to demonstrate cost-saving strategies for performing healthful behaviors (e.g. preparing healthy meals on a budget, affordable ways families can be active together). Addressing parent concerns while increasing their self-efficacy for performing healthful behaviors may be an effective way to help parents improve their health and QOL despite a tight budget.<sup>49,52</sup>

Focus group results also indicate that parents believed it was important for them to occasionally spend time away from their children to engage in personal pursuits, such as leisure activities. Parents who engage in personal leisure time pursuits have a greater sense of well-being, and for mothers the time spent away from children and engaging with other adults was associated with increased maternal engagement when with their children.<sup>53</sup> Thus, interventions may benefit from highlighting the potential for health-related behavior changes to also result in more leisure time for parents. For example, in addition to discussing the importance of preparing and planning meals in advance to support family health, framing the behavior as a time-saving strategy may increase parents' desire to change behavior. This is an example of a person-based approach that highlights the importance of recognizing the needs of the individual who will use the intervention as a means for improving the effectiveness of behavior change interventions.<sup>54</sup>

Some of the Spanish-speaking participants reported that being undocumented had a negative effect on their QOL. Other research has found similar results, describing a constant sense of anxiety in undocumented immigrants.<sup>55</sup> Spanish-speaking parents also had language barriers and felt that a lack of community support hampered their QOL. Social support has been shown to lessen the negative influence of acculturative stress on physical well-being.<sup>56</sup> Future health interventions targeting acculturating audience should not only provide culturally sensitive information delivered in the audience's language, but should also be aware of strategies for overcoming road blocks immigration status may pose<sup>57</sup> to participation in the program and/or performance of recommended behaviors. Program characteristics that build a sense of community support, such as social media pages or events, are some strategies intervention planners could consider offering acculturating populations.<sup>56,58,59</sup>

Parents' health (i.e. adequate sleep, healthy diet, sufficient physical exercise) was identified as a key determinant of their QOL as it influences their ability to effectively care for their family. Children's health was also frequently identified as affecting parents' QOL. Parents of generally healthy children rate their QOL significantly higher than parents of sick children,<sup>60</sup> supporting the idea that a child health can have an immense impact on a family's QOL. Bolstering the benefits of health-related behaviors on parents' abilities to care for their families and on children's health may increase parent desire to engage in healthy behavior change. For instance, interventions aiming to increase fruit and vegetable

intake may be more effective if they highlight the immune boosting benefits of fruits and vegetables in addition to other benefits such as weight control.

Although obesity prevention and weight control are the ultimate goals for many researchers, weight is not a particular concern for many parents.<sup>49</sup> This may be because many parents underestimate their children's weight status.<sup>61</sup> Hence, health communicators should likely consider other health-related factors affecting QOL when trying to address weight control topics.

Parents reported a few health-related factors that they believed would improve their entire family's QOL. One of these factors was providing healthy meals for their family, as they believed that eating healthy meals would have a positive impact on their lives. A systematic review of literature revealed that QOL is generally improved following dietary interventions.<sup>62</sup> Although the review was unable to identify the cause of improved QOL, several potential mediators were identified including the effect of altered dietary intake on social interactions, personal satisfaction, economics, physical health, and psychological health.<sup>62</sup> Improving parent understanding of the benefits of a healthy diet on factors aside from weight control and improved physical health may improve the effectiveness of future dietary interventions. In addition, parents identified parent-child co-play as a potential health-related method to improving QOL by making both parents and children happier. Future interventions could focus on both the physical and mental health benefits of active family playtime and promote the potential to build family bonds.<sup>63,64</sup>

Strengths of this study include using a theoretical framework to develop the focus group discussion guide and having highly trained focus group moderators and note-takers. A further strength is the large sample size drawn from three geographic locations. In addition, this study helps address a gap in the literature by describing the QOL determinants of parents of school-age children and can inform a wide array of interventions focusing on health. It is important to note that the findings of this study are limited in that they cannot be generalized to parents with children in other age groups or to children with chronic diseases, such as obesity. Research has shown that obese children have poorer QOL than healthy-weight children<sup>65-67</sup> and obesity prevention interventions can improve their QOL;<sup>68,69</sup> however, little is known about the effect of children's weight status on parental QOL. Parents in this study reported that their families' schedules and lifestyles had changed greatly since their children were in preschool. Thus, it can be presumed that parent's QOL determinants may also change as their children age. In addition, research has shown that parents of children with chronic health conditions such as autism, food allergies, diabetes, and cancer have poorer QOL and higher levels of stress and anxiety than parents of healthy children.<sup>70-72</sup>

Parents are children's primary role models, are food and physical activity gatekeepers, and establish the family lifestyle

and home environment; thus, they have the opportunity to cultivate a “culture of health” in the home.<sup>6–8,11,12,73,74</sup> Parents also need opportunities to learn obesity prevention strategies that are matched to the realities of their lifestyles and life goals.<sup>12,75</sup> Obesity prevention interventions targeted to parents of school-age children that are responsive to this audience’s QOL determinants have the potential to improve the health and QOL of the entire family. While this study focused on parental QOL, future health interventions have the potential to contribute to improved QOL for both parents and children. Parental encouragement of healthy behaviors has been shown to improve adolescent weight status as well as health-related QOL.<sup>76,77</sup>

## Conclusion

The PRECEDE model has been effective at improving QOL in a number of health-related interventions with a variety of participants from adults with chronic diseases<sup>22,78</sup> to healthy adolescents and children<sup>24,38,79,80</sup> and pregnant women.<sup>81</sup> By predicating childhood obesity prevention interventions on parent-defined QOL determinants, it may increase the attractiveness of these interventions, enhance retention of participants, and ultimately improve weight management behaviors. Next steps in the HomeStyles project include using the QOL determinants reported here to establish the overall tone and thrust of intervention materials and cognitively test parent responsiveness to these materials.

## Acknowledgements

K.M.E. and C.L.D. collected the data; K.M.E. and C.B.-B. analyzed the data.

## Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the United States Department of Agriculture, National Institute of Food and Agriculture, under Grant No. 2017-68001-26351.

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## References

- Hales CM, Carroll MD, Fryar CD, et al. *Prevalence of obesity among adults and youth: United States, 2015-2016*. Atlanta, GA: NCHS Data Brief, 2017.
- Kumar S and Kelly A. Review of childhood obesity: from epidemiology, etiology, and comorbidities to clinical assessment and treatment. *Mayo Clin Proc* 2017; 92(2): 251–265.
- Simmonds M, Llewellyn A, Owen C, et al. Predicting adult obesity from childhood obesity: a systematic review and meta-analysis. *Obes Rev* 2016; 17(2): 95–107.
- Zuba A and Warschburger P. The role of weight teasing and weight bias internalization in psychological functioning: a prospective study among school-aged children. *Eur Child Adolesc Psychiatry* 2017; 26(10): 1245–1255.
- Gishti O, Gaillard R, Durmus B, et al. BMI, total and abdominal fat distribution, and cardiovascular risk factors in school-age children. *Pediatr Res* 2015; 77(5): 710–718.
- Gruber KJ and Haldeman LA. Using the family to combat childhood and adult obesity. *Prev Chronic Dis* 2009; 6(3): A106.
- Ogata BN and Hayes D. Position of the Academy of Nutrition and Dietetics: nutrition guidance for healthy children ages 2 to 11 years. *J Acad Nutr Diet* 2014; 114(8): 1257–1276.
- Sahay TB, Ashbury FD, Roberts M, et al. Effective components for nutrition interventions: a review and application of the literature. *Health Promot Pract* 2006; 7(4): 418–427.
- Skouteris H, McCabe M, Swinburn B, et al. Parental influence and obesity prevention in pre-schoolers: a systematic review of interventions. *Obes Rev* 2011; 12(5): 315–328.
- Fiorito LM, Marini M, Mitchell DC, et al. Girls’ early sweetened carbonated beverage intake predicts different patterns of beverage and nutrient intake across childhood and adolescence. *J Am Diet Assoc* 2010; 110(4): 543–550.
- Golan M and Crow S. Parents are key players in the prevention and treatment of weight-related problems. *Nutr Rev* 2004; 62(1): 39–50.
- Institute of Medicine Committee on Progress in Preventing Childhood Obesity. *Progress in preventing childhood obesity: how do we measure up?* Washington, DC: National Academy Press, 2007.
- Pearson N, Biddle SJ and Gorely T. Family correlates of fruit and vegetable consumption in children and adolescents: a systematic review. *Public Health Nutr* 2009; 12(2): 267–283.
- Batram DS, Piche L, Beynon C, et al. Sugar-sweetened beverages: children’s perceptions, factors of influence, and suggestions for reducing intake. *J Nutr Educ Behav* 2016; 48(1): 27.e1–34.e1.
- Crozier AJ, Berry TR and Faulkner G. Examining the relationship between message variables, affective reactions, and parents’ instrumental attitudes toward their child’s physical activity: the “Mr. Lonely” public service announcement. *J Health Commun* 2018; 23(5): 477–484.
- Durkin S, Bayly M, Brennan E, et al. Fear, sadness and hope: which emotions maximize impact of anti-tobacco mass media advertisements among lower and higher SES groups. *J Health Commun* 2018; 23(5): 445–461.
- Best AL, Spencer SM, Friedman DB, et al. The influence of spiritual framing on African American women’s mammography intentions: a randomized trial. *J Health Commun* 2016; 21(6): 620–628.
- Centers for Disease Control and Prevention. Health-related quality of life (HRQOL), <https://www.cdc.gov/hrqol/concept.htm> (2016).
- Bartholomew LK, Markham C, Mullen P, et al. Planning models for theory-based health promotion interventions. In: Glanz K, Rimer BK and Viswanath K (eds) *Health behavior: theory, research, and practice*. 5th ed. San Francisco, CA: Jossey-Bass, 2015, pp. 165–184.
- Green LW and Kreuter MW. *Health program planning: an educational and ecological approach*. 4th ed. New York: McGraw-Hill, 2005.



21. Porter CM. Revisiting PRECEDE-PROCEED: a leading model for ecological and ethical health promotion. *Health Educ J* 2016; 75: 753–764.
22. Wang Q, Dong L, Jian Z, et al. Effectiveness of a PRECEDE-based education intervention on quality of life in elderly patients with chronic heart failure. *BMC Cardiovasc Disord* 2017; 17(1): 262.
23. Dizaji MB, Taghdisi MH, Solhi M, et al. Effects of educational intervention based on PRECEDE model on self care behaviors and control in patients with type 2 diabetes in 2012. *J Diabetes Metab Disord* 2014; 13: 72.
24. Kattelman KK, White AA, Greene GW, et al. Development of Young Adults Eating and Active for Health (YEAH) internet-based intervention via a community-based participatory research model. *J Nutr Educ Behav* 2014; 46(2): S10–S25.
25. McLafferty I. Focus group interviews as a data collecting strategy. *J Adv Nurs* 2004; 48(2): 187–194.
26. Rollnick S, Mason P and Butler CC. *Health behavior change (e-book)*. Poland: Elsevier Health Sciences, 2010.
27. Eck KM, Delaney CL, Dinesen A, et al. “Go outside and play!” Qualitative investigation of the cognitions, barriers, and supports for recommended active play and screentime behaviors of parents and school-age children. *J Health Commun* 2018; 10: S1–S4.
28. Eck KM, Spaccarotella K, Delaney CL, et al. “It’s making memories”: a qualitative investigation of family mealtime cognitions, barriers and strategies for success of parents and school-aged kids. *J Child Obes* 2018; 3: 1–11.
29. Eck KM, Delaney CL, Leary MP, et al. “My Tummy tells me” cognitions, barriers and supports of parents and school-age children for appropriate portion sizes. *Nutrients* 2018; 10(8): 1040–1053.
30. Eck KM, Dinesen A, Garcia E, et al. “Your body feels better when you drink water”: parent and school-age children’s sugar-sweetened beverage cognitions. *Nutrients* 2018; 10(9): 1232–1045.
31. Harris J, Gleason P, Sheean P, et al. An introduction to qualitative research for food and nutrition professionals. *J Am Diet Assoc* 2009; 109(1): 80–90.
32. Miles MB and Huberman AM. *Qualitative data analysis*. 2nd ed. Thousand Oaks, CA: SAGE Publications, 1994.
33. Krippendorff K. *Content analysis: an introduction to its methodology*. Beverly Hills, CA: SAGE Publications, 1980.
34. Sandelowski M. Sample size in qualitative research. *Res Nurs Health* 1995; 18(2): 179–183.
35. Poston D, Turnbull A, Park J, et al. Family quality of life: a qualitative inquiry. *Ment Retard* 2003; 41(5): 313–328.
36. Summers J, Poston DJ, Turnbull AP, et al. Conceptualizing and measuring family quality of life. *J Intellect Disabil Res* 2005; 49(Pt 10): 777–783.
37. Martin-Biggers J, Spaccarotella K, Delaney C, et al. Development of the intervention materials for the HomeStyles childhood obesity prevention program for parents of pre-schoolers. *Nutrients* 2015; 7: 6628–6669.
38. Quick V, Martin-Biggers J, Povich GA, et al. Long-term follow-up effects of the HomeStyles randomized controlled trial in families with preschool children on social cognitive theory constructs associated with physical activity cognitions and behaviors. *Contemp Clin Trials* 2018; 68: 79–89.
39. Ho HCY, Mui M, Wan A, et al. Happy Family Kitchen II: a cluster randomized controlled trial of a community-based family intervention for enhancing family communication and well-being in Hong Kong. *Front Psychol* 2016; 7: 638.
40. Rhodes RE and Lim C. Promoting parent and child physical activity together: elicitation of potential intervention targets and preferences. *Health Educ Behav* 2018; 45(1): 112–123.
41. Haar JM, Russo M, Suñe A, et al. Outcomes of work–life balance on job satisfaction, life satisfaction and mental health: a study across seven cultures. *J Vocat Behav* 2014; 85(3): 361–373.
42. Parker K and Wang W. *Modern parenthood: roles of moms and dads converge as they balance work and family*. Washington, DC: Pew Research Center, 2013.
43. Li J, Johnson SE, Han W, et al. Parents’ nonstandard work schedules and child well-being: a critical review of the literature. *J Prim Prev* 2014; 35(1): 53–73.
44. Hawkins SS, Cole TJ and Law C. Examining the relationship between maternal employment and health behaviours in 5-year-old British children. *J Epidemiol Community Health* 2009; 63(12): 999–1004.
45. Kessler H, Wansink B and Velez Argumedo CM. Cooking with kids: eating the same but behaving better. *FASEB J* 2017; 31(1): 641.4.
46. McHale SM, Davis KD, Green K, et al. Effects of a workplace intervention on parent–child relationships. *J Child Fam Stud* 2016; 25(2): 553–561.
47. Hammer LB, Kossek EE, Anger WK, et al. Clarifying work-family intervention processes: the roles of work-family conflict and family supportive supervisor behaviors. *J Appl Psychol* 2011; 96(1): 134–150.
48. Hammer LB, Kossek EE, Yragui NL, et al. Development and validation of a multidimensional measure of family supportive supervisor behaviors (FSSB). *J Manage* 2009; 35(4): 837–856.
49. Burrows T, Hutchesson M, Chai LK, et al. Nutrition interventions for prevention and management of childhood obesity: what do parents want from an eHealth program? *Nutrients* 2015; 7(12): 10469–10479.
50. Serwinski B, Salavec G, Kirschbaum C, et al. Associations between hair cortisol concentration, income, income dynamics and status incongruity in healthy middle-aged women. *Psychoneuroendocrinology* 2016; 67: 182–188.
51. Kennedy LE, Misyak S, Hosig K, et al. The Slow Down Program: a mixed methods pilot study of a mindfulness-based stress management and nutrition education program for mothers. *Complement Ther Med* 2018; 38: 1–6.
52. Koszewski WM, Hlavacek M, Yerxa K, et al. Positive quality of life factors identified from EFNEP participant stories. *J Ext* 2014; 52(4): 4FEA7.
53. Offer S. Free time and emotional well-being: do dual-earner mothers and fathers differ? *Gend Soc* 2016; 30(2): 213–239.
54. Yardley L, Morrison L, Bradbury K, et al. The person-based approach to intervention development: application to digital health-related behavior change interventions. *J Med Internet Res* 2015; 17(1): e30.
55. Joseph TD. “My life was filled with constant anxiety”: anti-immigrant discrimination, undocumented status, and their mental health implications for Brazilian immigrants. *Race Soc Probl* 2011; 3: 170–181.



56. Salgado H, Castaneda SF, Talavera GA, et al. The role of social support and acculturative stress in health-related quality of life among day laborers in Northern San Diego. *J Immigr Minor Health* 2012; 14(3): 379–385.
57. Martinez O, Wu E, Sandfort T, et al. Evaluating the impact of immigration policies on health status among undocumented immigrants: a systematic review. *J Immigr Minor Health* 2015; 17(3): 947–970.
58. Marquez B, Anderson A, Wing RR, et al. The relationship of social support with treatment adherence and weight loss in Latinos with type 2 diabetes. *Obesity* 2016; 24(3): 568–575.
59. Cherrington AL, Willig AL, Agne AA, et al. Development of a theory-based, peer support intervention to promote weight loss among Latina immigrants. *BMC Obes* 2015; 2(1): 17.
60. Hatzmann J, Heymans HS, Ferrer-i-Carbonell A, et al. Hidden consequences of success in pediatrics: parental health-related quality of life—results from the Care Project. *Pediatrics* 2008; 122(5): e1030–e1108.
61. Lundahl A, Kidwell KM and Nelson TD. Parental underestimates of child weight: a meta-analysis. *Pediatrics* 2014; 133(3): e689–e703.
62. Carson TL, Hidalgo B, Ard JD, et al. Dietary interventions and quality of life: a systematic review of the literature. *J Nutr Educ Behav* 2014; 46(2): 90–101.
63. Milteer RM and Ginsburg KR. The importance of play in promoting healthy child development and maintaining strong parent-child bond: focus on children in poverty. *Pediatrics* 2012; 129: e204–e213.
64. Ginsburg KR. The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics* 2007; 119(1): 182–191.
65. Khairy SA, Eid SR, El Hadidy LM, et al. The health-related quality of life in normal and obese children. *Egypt Pediatr Assoc Gaz* 2016; 64(2): 53–60.
66. Morrison KM, Shin S, Tarnopolsky M, et al. Association of depression & health related quality of life with body composition in children and youth with obesity. *J Affect Disord* 2015; 172: 18–23.
67. Whitaker BN, Fisher PL, Jambhekar S, et al. Impact of degree of obesity on sleep, quality of life, and depression in youth. *J Pediatr Health Care* 2018; 32(2): e37–e44.
68. Vos RC, Huisman SD, Houdijk EC, et al. The effect of family-based multidisciplinary cognitive behavioral treatment on health-related quality of life in childhood obesity. *Qual Life Res* 2011; 21(9): 1578–1594.
69. Hoedjes M, Makkes S, Halberstadt J, et al. Health-related quality of life in children and adolescents with severe obesity after intensive lifestyle treatment and at 1-year follow-up. *Obes Facts* 2018; 11(2): 116–128.
70. Dardas LA and Ahmad MM. Coping strategies as mediators and moderators between stress and quality of life among parents of children with autistic disorders. *Stress Health* 2013; 31: 5–12.
71. Khanna AK, Prabhakaran A, Partel P, et al. Social, psychological and financial burden on caregivers of children with chronic illness: a cross-sectional study. *Indian J Pediatr* 2015; 82(11): 1006–1011.
72. Warren CM, Gupta RS, Sohn MW, et al. Differences in empowerment and quality of life among parents of children with food allergy. *Ann Allergy Asthma Immunol* 2015; 114(2): 117–125.
73. Robson S, Couch S, Peugh J, et al. Parent diet quality and energy intake are related to child diet quality and energy intake. *J Acad Nutr Diet* 2016; 116(6): 984–990.
74. Swinburn B and Egger G. The runaway weight gain train: too many accelerators, not enough brakes. *BMJ* 2004; 329: 736–739.
75. Fletcher A. *Changing lives, saving lives: a step-by-step guide to developing exemplary practices in healthy eating, physical activity and food security in afterschool programs*. 2nd ed. Sacramento, CA: Center for Collaborative Solutions, 2015.
76. Nicholls L, Lewis AJ, Petersen S, et al. Parental encouragement of healthy behaviors: adolescent weight status and health-related quality of life. *BMC Public Health* 2014; 14(1): 369.
77. Davids EL, Roman NV and Leach L. The link between parenting approaches and health behavior: a systematic review. *J Hum Behav Soc Environ* 2017; 27(6): 589–608.
78. Hu J, Wallace DC and Tesh AS. Physical activity, obesity, nutritional health and quality of life in low-income Hispanic adults with diabetes. *J Community Health Nurs* 2010; 27(2): 70–83.
79. Johnson O. *Application of the PRECEDE-PROCEED model in the evaluation of a community-based youth fitness and nutrition summer camp program*. Thesis. University of Vermont, 2016.
80. Walsh JR, White AA and Kattelman KK. Using PRECEDE to develop a weight management program for disadvantaged young adults. *J Nutr Educ Behav* 2014; 46(2): S1–S9.
81. Moshki M, Kharazmi A, Cheravi K, et al. The prediction of postpartum depression: the role of the PRECEDE model and health locus of control. *J Family Med Prim Care* 2015; 4(3): 454–460.