Author’s response to reviews

Title: Beyond clinical food prescriptions and mobile markets: parent views on the role of a healthcare institution in increasing healthy eating in food insecure families

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Reviewer’s response to reviews:

Reviewer #1: This study sought to identify barriers and facilitators for fruit and vegetable consumption among food-insecure families, particularly regarding children's intake. Further, according to a patient-centered model of care it aimed to elicit solutions from the caregiver's perspective. Overall I found this to be a really well-written paper that cover an important topic. I have some questions and suggestions that are listed below.

It is somewhat unclear if focus is specifically what health care can do or solutions in general. Specifically, since the suggested solutions range from policy to individual. Could it be emphasized in the title that focus is what healthcare institutions could do?
We thank the reviewer for this suggestion and have updated the title to “Beyond clinical food prescriptions and mobile markets: parent views on the role of a healthcare institution in increasing healthy eating in food-insecure families” The levels (from individual/family up to policy) all represent levels for interventions or programs that health care institutions can implement to target needs. Clarification language has also been added to Table 2.

You describe that parents and caregivers of patients were recruited. In what way were they patients? Were they on regular health check-ups/growth monitoring? Or could did it also include patients with health conditions which could affect the result somehow? It is also not clear to me
how frequently they visited the clinic? Given that some suggestions were to have onsite fruit and vegetables at the clinic to hand out. What age were the children in the families? We appreciate the reviewer’s attention to detail and in response we have added the following (in bold): “We conducted qualitative focus group discussions with parents and caregivers of patients of a primary care clinic embedded in a larger pediatric health care system that serves children from birth through adolescence.” Data was not collected regarding demographics of the children/patients (i.e. ages), but we do include ages and demographics of the caregivers who were the focus group participants. In addition, we added (in bold): “We recruited participants who screened positive for food insecurity during their child’s well or sick primary care visits.” While data was not collected regarding other specialty care clinics patients visit, some participants made references to routine visits to additional clinics during group discussions. Could you give more details of the semi-structured guide? Or provide it in a table or as a supplement? The semi-structured guide is included as a supplement. In addition, we’ve added the following details: We developed the guide after conducting in-person interviews with WIC participants who had received a similar fruit and vegetable prescription in a pilot project. Based on those interviews, as well as phone surveys with patient families who had received the prescription, we reviewed and revised questions for the focus group format. All authors, as well as physicians from Children’s Mercy’s Hunger Free Hospital Task Force, were involved in developing and reviewing the guide.

Could you shortly explain community-based participatory research? The following description was added to the manuscript: Some activities in the focus group were influenced by the CBPR methodology. CBPR methods involve community members sharing their experiences to increase knowledge and understanding of a topic in order to identify interventions and policy changes to address inequalities within a marginalized population. For simplicity, we have removed reference to CBPR and described the activities performed (free listing, ranking).

I suggest restructuring Table 2. It would be more clear if the table was structured in line with the result section. So when reading it’s easier to follow the table. This could be done by having "barriers addressed" in the first column and "SE model level" in the third and putting the results in the table the same order as they are presented in the text. This reviewer’s suggestion is very thoughtful, however, we wanted to preserve the SE levels in the table to align with our framing through the socioecological model. We did reorganize some of the inter-level intervention ideas to match the results section more closely, as suggested, and made additional adjustments to Table 2, as recommended by the other reviewer.

The discussion could be strengthen. Particularly the first part focusing on the barriers. For instance there are studies focusing on children's picky eating in low-income families e.g. Harris et al., 2019 (https://urldefense.proofpoint.com/v2/url?u=https-3A__doi.org_10.1016_j.appet.2019.03.005&d=DwIGaQ&c=Zl2T6valOSZ-iGixmidu-Jjpn1CKtCi7U5wJPI4UCCTc&r=fZnrLa-C82a7Y3YhK0Ts82g&m=0H1Dqu7dXD7HGAH6RhI7zA2qY1TiOmMU8L We thank the reviewer for the helpful literature reference that ties directly into our discussion of barriers to healthy eating. The reference was added to the discussion on barriers related to desirability. We added to the reference and described the barrier in the literature related to “fussy eating habits that limit food exposure practices”. In addition, this study supports our findings that
for food-insecure families, the intersectionality of barriers is complex and overlapping. To this end, we also added this reference in the discussion section as an additional, poignant example of intersecting barriers of desirability and affordability for families experiencing food insecurity. The following text was added in the discussion section as well: The intersection of food insecurity and desirability is further explored mothers of food insecure households were shown to feed their child a narrow range of foods out of concern for food and economic waste, as response that unintentionally limited the child’s exposure to a variety of healthy foods, resulting in pickier eating habits.

I also think this review by Peeters & Blake, 2016 is highly relevant (https://urldefense.proofpoint.com/v2/url?u=https-3A__link.springer.com_article_10.1007_s13668-2D016-2D0167-2D5&d=DwIGaQ&c=Zi2T6vaICx2zrnlj1KtC7U5wJPI4UCTc&r=fZnrIaC82a7Y3YhK0Ts82g&m=0HIDqu7dXD7HGAH6RhIzA2qY1TiOmMU8LzC_KET-DUs&s=Tfgzz1v0OFH3-CB1yOL72iKR2h7q3O35CdgSEQl3M4I&e= ).

We appreciate the reviewer’s search query that identified additional literature that relates to our study in addressing the multilevel interventions at the individual and community level and speaks to the importance of focusing on populations with high needs. To this end, we’ve included this study and several others that have reviewed multi-component strategies. In the discussion section, we added the following: As part of a multilevel intervention strategy that includes increasing accessibility and affordability, programs that work to promote desirability at the family-level could help shift preferences of both children and parents, who serve as important role models in their children’s eating behaviors. Multilevel intervention strategies that pay close attention to the impact on specific populations, such as families living with food insecurity, can have significant impact on reducing disparities in diet and health.

Further, I find it interesting how the participants see health care providers as advocates for such a broad span of issues and that suggested solutions were all the way up to policy level. Would be interesting to hear a discussion around this. Is it because your participants were frequent visitors? Does health care have this important role in other studies?

We appreciate these important questions the reviewer has raised. While we know that our participants were seen in a primary care clinic, we did not directly ask how often they visited their PCP provider or if they had visited specialty clinics. During our discussion, some participants mentioned routinely visiting specialty clinics.

We agree that it is interesting that participants saw an expanded role for the healthcare institution, across the various levels of the socio-ecological model, including the policy level. We directly asked participants what our healthcare institution might do to help families with FVC, specifically considering the barriers participants discussed in the first half of the focus group related to FVC and food insecurity. We added the following in the discussion about the policy level related to that: Health care institutions’ involvement in policy-level advocacy has been suggested in previous studies that elicit participants’ perspectives on barriers to healthy eating and impacts of food insecurity. In these studies, while participants were not specifically asked about the role of the healthcare institution (as in our study), the authors do conclude that a role exists for the healthcare institution to advocate for policies or programs at multiple levels of the socio ecological model. In our study participants were asked directly about the role of our healthcare institution related to food insecurity and FVC, and then participants themselves made suggestions that included the expanded role for the healthcare institution, such as the policy- level advocacy for issues of food security and broader social determinants of health.

Why is the socio-ecological model used? Could you integrate the model more in the discussion?
We thank the reviewer for this question. In our analysis, we noted that participants suggestions were wide-ranging and fit into the different levels of the socioecological model. To that end, we added to the methods the following text: We were seeing that participant suggestions naturally fell into different levels of the socioecological model. As lifestyle behavior change strategies are shifting toward multilevel interventions, it’s useful to examine participants ideas within each level of influence. Further, mapping participant suggestions in the socioecological model may be useful for program planning, as healthy lifestyle behavior change programs are increasingly employing multilevel intervention strategies.”

In addition, we integrate the model further in the discussion in several places, particularly in the discussion about multilevel interventions and in exploring the role of the healthcare institution at the policy-level. We hope to illuminate that parents themselves saw an expanded role for the healthcare provider or institution, and by providing examples of key suggestions from parents, healthcare institutions can develop a deeper understanding of strategies that vary in type and level, in response to the interconnected nature of barriers that parents articulated. We added the following text at the end of this discussion, as well as integrating the model more, as described in above responses: Considering the range of parent-generated solutions, health care institutions may be able to identify those of which are feasible and which fit into broad strategies being implemented by the institution, or even within the wider community, to address food insecurity and FVC.

Row 414 individual level - is this the same as family in table 2?
Yes, individual has been added to family for clarification.

Reviewer #2: Beyond clinical food prescriptions and mobile markets: parent views on increasing healthy eating in food-insecure families

In this paper the authors aimed to develop an understanding of barriers to fruit and vegetable consumption (FVC) and how healthcare systems could facilitate FVC in food-insecure families. The participants were 90% female, 41% Black/African American and 41% Hispanic/Latino. Through analyses of focus groups, a conceptual model for the Predominant Barriers to Fruit and Vegetable Consumption was created representing affordability, accessibility and desirability. Suggestions to healthcare institutions to promote FVC was also created.

This is a well written manuscript that present an interesting and highly relevant topic, especially now when the Covid-19 pandemic has affected families world-wide. I have some comments that I feel can strengthen this manuscript further especially regarding a more thorough presentation of the results and a more developed discussion. I believe that the discussions from the focus groups can be better presented in the manuscripts. Also, it would be desirable that the recommendation were more practical as to how the health care can actually use the results presented. I provide my comments below:

Methods:
Please provide a description of how the interview guide was developed. Who was involved in this work, what expertise did these persons have? Were the questions piloted, and if so on who? Please also provide examples of the questions or better still include as a supplement in the manuscript. We thank the reviewer for this suggestion and have included the semi-structured focus group guide as a supplement. In addition, we have included a brief description of how the guide was
developed: We developed the guide after conducting in-person interviews with WIC participants who had received a similar fruit and vegetable prescription in a pilot project. Based on those interviews, as well as phone surveys with patient families who had received the prescription, we reviewed and revised questions for the focus group format. All authors, as well as physicians from Children’s Mercy’s Hunger Free Hospital Task Force, were involved in developing and reviewing the guide.

Please provide a more thorough description of the persons involved in the data collection (the focus groups) background/expertise, as well as the analyses. Perhaps as initials of the authors. We appreciate this suggestion and have included the following information about those involved: English-speaking focus groups were moderated by the first authors (EMS, ED), while Spanish-speaking groups were led by bilingual/bicultural co-authors (KP, EDD). Moderators and assistants are masters-level research staff with specialized training in focus group moderation.

Please describe what a community-based participatory research method is. We’ve included the following in reference to community-based participatory research methods: Some activities in the focus group were influenced by the CBPR methodology. CBPR methods involve community members sharing their experiences to increase knowledge and understanding of a topic in order to identify interventions and policy changes to address inequalities within a marginalized population. For simplicity, we have removed reference to CBPR and described the activities performed (free listing, ranking).

Results:
To strengthen the result section, go through the results and remove quotations that are repeated in another quote and thus redundant. Also, some quotes are exact repetition of what is written in the text of what is reported. Please, develop the text so that together with the quotes it provides a better understanding of the discussions. Some quotes are better to integrate as text for the reader to get a better understanding of the discussion e.g. Line 176-181. This way your results will become more nuanced. A good example of how to present the results is line 215-223.
Thank you for these suggestions to strengthen the results. In response, we have removed several quotes, as well as shortening others and adjusting text throughout the results section, so as to avoid repetition and provide better integration with the text.
I would recommend you to remove the quotes on line 230-232 and 257. We removed these quotes as well.
Table 1 I would suggest adding % to the columns in table 1 i.e. n (%) and present the total numbers for the group in a row directly below each group (n=14, n=12, n=29).
We have adjusted the table to include the percentages, as suggested.

Table 2 I found the table a bit difficult to understand at first sight. In the heading, include abbreviation for Socioecological (SE) model. Be consistent so that the words used in the table heading are the same as in the columns in the tables. For example, in the heading it says "intervention" but in the columns "program", be consistent. "Description … of what? In the heading you don't say anything about barriers, so it is confusing to have it as a heading of the columns.
The abbreviation for Socioecological model has been added to the heading. The column title has also been modified by changing “program” to match “Intervention Idea”. “Description” has been
updated to “Description for Healthcare System Action”. “Barriers” has also been added to the title of Table 2.
Thank you for your attention to detail and suggestions on the table. In combination with recommendations from the other reviewer, we have adjusted Table 2.

Discussion:
It seems like a lot of responsibility was put on the health care providers. Is this realistic and feasible? You mention this as a limitation could you develop this discussion? A discussion on how to implement the recommendations would strengthen the discussion instead of just offering "should consider ways to advocate for maintenance and expansion of effective federal and community programs…". If families don't attend the programs offered, as was pointed out, what can be done to increase attendance?
We thank the reviewer for this thoughtful comment and suggestion. We have added an emphasis that the participants themselves identified the importance of the healthcare institution in these multiple levels of interventions. The reviewer’s point is well taken about the level of responsibility for the healthcare provider. While framing the parent-generated interventions within the different levels of the socio-ecological model, we do not intend to suggest that a healthcare provider is able to implement all suggestion concurrently. We hope to illuminate that parents themselves saw an expanded role for the healthcare provider or institution, and by providing examples of key suggestions from parents, healthcare institutions can develop a deeper understanding of strategies that vary in type and level, in response to the interconnected nature of barriers that parents articulated. To that end, we added the following to the discussion section: Considering the range of parent-generated solutions, health care institutions may be able to identify those of which are feasible and which fit into broad strategies being implemented by the institution, or even within the wider community, to address food insecurity and FVC.
We thank the reviewer for the suggestion about feasibility as well. Healthcare institutions may be able to respond more effectively to the needs of families experiencing food insecurity, when they consider the intersecting barriers parents identified and the varying levels of intervention that the parents themselves saw as important to overcome these barriers. We recognize that implementation will depend on what is feasible and appropriate for individual healthcare institution. As suggested, we've added text to provide several examples of ways that healthcare providers or institutions may align efforts with other organizations or local collaborative efforts to be a part of a systems-wide approach. To this end, we added in the discussion: For example, healthcare institutions could identify strategies to join advocacy efforts connected with professional organizations (i.e. AAP), national anti-hunger organizations or local collaborative groups, where the voice of a healthcare provider or institution could add valuable perspective and knowledge. Healthcare systems with government or community liaisons should work to keep abreast of local and national policy developments, issuing statements or providing testimony in support of expanding food assistance from a healthcare perspective.
In terms of attendance at existing programs, we provide examples of advocating for programs/policies that participants identified as being most helpful and previously utilized by their families for accessing healthy foods, such as WIC, SNAP, and school lunch programs. We added the following text in the discussion in effort to further clarify and strengthen this section:
Participants themselves identified the importance of the healthcare institution advocating for policies that address the social determinants of health. We also added: Ensuring access to or
expansion of these programs that participants identified as helpful, is a potentially effective strategy in terms of addressing barriers reported.

Line 447: Perhaps provide an example of a successful intervention.

We’ve added an example from our references: For example, a healthcare system in Colorado implemented community specialists in an active referral process to connect patients with social assistance, including food programs, increasing the percentage of referred patients using a resource hotline from 5 percent to 75 percent.

Parents are the most important role models for children to eat fruit and vegetables. As one of the quotes reveals, this was a great challenge in the families (a father did not eat the vegetables). How were parents as role models for FVC discussed during the focus groups? If parents don't want to spend money on FV because the family doesn't eat them, to me, this is an important task for health care providers, that is also within their range of expertise (or should be). In table 2 could this be included more specifically?

We appreciate the suggestion about parents as role models for FVC and agree that this could be an important role for a healthcare provider. However, since Table 2 is participant-generated interventions, we did not feel we could add a new suggestion that participants did not identify themselves. While within the range of expertise of the provider, participants did not identify this as a palatable intervention or solution that they felt would help them increase FVC in their children. We did add the following text to address the suggestion: Participants emphasized involving the child or whole family in many of the program ideas, which may help address barriers around desirability of fruits and vegetables in children and in other family members. As part of a multilevel intervention strategy that includes increasing accessibility and affordability, programs that work to promote desirability at the family-level could help shift preferences of both children and parents, who serve as important role models in their children’s eating behaviors.

In addition, we added a reference in the literature that highlights the intersection of affordability and desirability, particularly for families experiencing food insecurity. These findings parallel our own in the barriers of picky eating (desirability) and affordability, as articulated by participants in our focus groups, and speaks to the need for multilevel interventions that can address multiple barriers. We added the following text to the discussion section with the additional reference: The intersection of food insecurity and desirability is further explained in the literature, as mothers of food insecure households were shown to feed their child a narrow range of foods out of concern for food and economic waste, a response that unintentionally limited the child’s exposure to a variety of healthy foods, resulting in pickier eating habits. In examining these three intersecting barriers alongside participant programmatic recommendations, our results highlight the need for hospital-based initiatives to go beyond addressing single barriers and consider affordability, accessibility and desirability factors in their programming.

The authors divided the groups into English/Spanish speaking groups. Were there any cultural differences in the discussions? Food preferences that made FVC be looked upon differently?

These topics would be highly relevant to include. If there were no differences this could be mentioned too.

Thank you for this important question. The most notable area that we found distinction was in describing barriers to desirability, relating to cultural foods, in the results section. We’ve added and edited the following: While most of the barriers were consistent across both the English and Spanish groups, many Hispanic parents, in particular, identified struggles to eat healthy when fruits and vegetables are not a typical component of their meals. Hispanic parents, in particular,
spoke about cooking consistent with their families’ cultural traditions, preferences and habits, which they described often did not include vegetables.

References:
Please make sure the references are referred to correctly in the reference list e.g. ref 1 Author; 6 some text seems redundant; 9 J Am Diet Assoc.; 12; 21; 31

Minor comments:
Line 94: Please abbreviate fruit and vegetable consumption Line 146: It seems reference 26 is misplaced Line 150: Depending on journal guidelines, abbreviate Fruit and Vegetable Consumption in this heading.
Line 390: add what studies are referred to.
Line 418: please "change obese children" to "children with obesity"
Thank you for your attention to detail. We made all the above changes. Thank you for your time and review!