

Nutrition education and cooking workshops for families of children with cancer: a feasibility study

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Abstract

Background Perturbations of food intake are common in children with cancer and are often caused by changes in the sense of taste and nausea. The VIE (Valorization, Implication, Education) project proposes family-based nutrition and cooking education workshops during the cancer treatments. Process evaluation during implementation allows to assess if the intervention was delivered as planned and to determine its barriers and facilitators. The objective was to describe the implementation process of a nutrition education and cooking workshop program for families of children during active treatment of cancer in a non-randomized non-controlled feasibility study. Methods Six open-to-all in-hospital workshops were offered on a weekly basis during a one-year implementation phase. Multiple data collection methods were used including field notes, survey, questionnaires and activity reports. Data were collected from the facilitator and families from the Division of Hematology-Oncology. Survey respondents were mostly mothers (n=19, 73%) and the mean time since child's diagnosis was 7.98 (\pm 0.81) months. Qualitative data were codified using hybrid content analysis. The first deductive analysis was based on the Steckler & Linnan concepts. Subthemes were then identified inductively. Quantitative data were presented with descriptive statistics. Results Attendance was low and 71% of the planned workshops were cancelled. The principal barriers to participation referred the child's medical condition, parental presence at the child's bedside and challenges related to logistics and time management. The level of interest in the topics addressed was found high or very high for 92% of the participants. The themes that were perceived as the most useful by parents were related to the child's specific medical condition. Conclusions Despite high interest, workshops in a face-to-face format are poorly feasible in the context of pediatric oncology. Web-based video is a promising avenue to increase accessibility of the nutritional information provided in the workshops. According to our results, the workshops are now offered online as short video capsules. We believe that this will address the barriers encountered by families, provide a better access to information and evaluate of the impact of the intervention. Key words: nutrition workshops, culinary demonstration, process evaluation, childhood cancer, parents

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Methods: Six open-to-all in-hospital workshops were offered on a weekly basis during a one-year implementation phase. Multiple data collection methods were used including field notes, survey, questionnaires and activity reports. Data were collected from the facilitator and families from the Division of Hematology-Oncology. Survey respondents were mostly mothers (n=19, 73%) and the mean time since

child's diagnosis was 7.98 (\pm 0.81) months. Qualitative data were codified using hybrid content analysis. The first deductive analysis was based on the Steckler & Linnan concepts. Subthemes were then identified inductively. Quantitative data were presented with descriptive statistics.

Results: Attendance was low and 71% of the planned workshops were cancelled. The principal barriers to participation referred the child's medical condition, parental presence at the child's bedside and challenges related to logistics and time management. The level of interest in the topics addressed was found high or very high for 92% of the participants. The themes that were perceived as the most useful by parents were related to the child's specific medical condition.

Conclusions: Despite high interest, workshops in a face-to-face format are poorly feasible in the context of pediatric oncology. Web-based video is a promising avenue to increase accessibility of the nutritional information provided in the workshops. According to our results, the workshops are now offered online as short video capsules. We believe that this will address the barriers encountered by families, provide a better access to information and evaluate the impact of the intervention.

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Background

During treatment of childhood and adolescent cancer, many factors may influence food intake. Among others, changes in sense of taste and gastrointestinal side effects can alter children's appetite and modify their preferences[1-4]. Children are disposed to like fat and savory foods that are frequently preferred during cancer treatment[2, 4-6]. Parents have reported that their child's cravings and pickiness are very difficult challenges to manage and that they rarely know which strategies are best to use during these stages[1].

Children with cancer are both at risk of malnutrition and excessive weight gain during treatments. Studies showed that the use of corticosteroids can lead to higher energy intake compared to off-steroid periods and to healthy controls[7, 8]. On the other hand, a decreased appetite can impair nutritional status that is associated with lower tolerance to treatments and to an increased prevalence of infections[9, 10].

The eating habits acquired during treatments are maintained throughout survivorship[11-13]. They were found not different to those of the general population and thus non-favorable to prevent cardiovascular and other lifestyle-influenced diseases[11]. Considering the growing literature showing that childhood cancer survivors have a higher risk to develop health complications such as dyslipidemia and the metabolic syndrome[14, 15], nutritional interventions and education are promising avenues to reduce the risk of long-term medical sequelae.

Most of the existing nutrition education interventions in childhood cancer were designed for patients at the end of their treatment or for survivors[16-22] and few have included a culinary component[23, 24]. However, intervening at the end of cancer treatment might be too late to reverse the acquired food

habits[20]. While this supports the need for early interventions, their feasibility in the context of a new childhood cancer diagnosis and initiation of treatments is unknown.

Process evaluation allows to better understand and interpret the success or failure of a program. Barriers and facilitators can be raised therefore making it possible to adequately attribute outcomes to the intervention rather than to its implementation[25]. The components proposed by *Steckler and Linnan* for public health interventions are *fidelity, dose delivered, dose received, context, recruitment and reach*[25].

Combining quantitative and qualitative data using multiple methods of collection can enhance the richness of further interpretation[25-29]. In this study, we aim to describe the implementation process of in-hospital nutritional and culinary education workshops for families of children with cancer. Our main aim was to assess the feasibility of in-hospital face-to-face workshops early after the child's diagnosis. Our secondary objective was to determine the facilitators and challenges for families to participate to the workshops.

Methods

Description of the Nutritional and Culinary Workshops

This study is part of VIE (Valorization, Implication, Education), a multidisciplinary program including nutritional, psychological and physical activity interventions. The development of the curriculum of the VIE nutritional and culinary workshops has been described elsewhere[24]. Briefly, the workshops were developed and validated following an 8-step iterative process, including a review of the literature and consultations with a steering committee. The workshops consisted in weekly culinary demonstrations coupled with nutritional key messages and were destined to parents of children with cancer and their relatives. They were delivered by a registered dietician, the principal facilitator, accompanied with a chef. They addressed themes related to nutrition and childhood cancer and to healthy eating. Each workshop was independent from each other and included information related to the prevention of foodborne infections for immunocompromised patients. The themes of the 6 workshops were: 1) Meal fortification; 2) Changes in taste during cancer therapy and their impact on children; 3) Adapting diet to eating-related side effects of treatments; 4) Nutritional support; 5) Mediterranean diet and health and; 6) Planning quick and economic meals. Participation to the workshops was voluntary and open to all families in the Division of Hematology-Oncology. The VIE study was approved by the Sainte-Justine University Hospital Center Institutional Review Board.

Participants. Participants of the workshops included families recruited as part of the VIE program, as well as other families visiting the Division of Hematology-Oncology. Workshop participation was voluntary. Parents participating in the VIE program were surveyed to collect their appreciation and perceived utility of the workshops. Field notes were acquired from a convenience sample composed of families that were present in the common areas of the outpatient and inpatient clinics.

Study Design and Measures

Based on the *Steckler and Linnan* framework[25] and on the structure proposed by Saunders *et al.*[29], the process evaluation was based on the exhaustive description of the program. The collect methods included activity reports, field notes, participant questionnaires, an implementation checklist and a survey. The questions addressed in the tools used to evaluate the implementation process are detailed in Table 1 (in the Supplementary Information). The implementation of the workshops occurred on a 12-month period (March 2018 to March 2019).

Activity report.After each workshop, the facilitator filled an activity report to assess the difficulties and factors that influenced the delivery of each workshop.

Field notes. The facilitator inquired a convenience sample of parents on their opinion about the workshops during promotional tours in the Division of Hematology-Oncology. Parents' answers were summarized by the facilitator. The number of families approached was not compatibilized by the facilitator.

Participant questionnaires. After each workshop, participants were encouraged to answer a short questionnaire about their satisfaction, perception of utility and of knowledge acquisition. The questionnaires were developed for each workshop by the research team and revised by an expert in the field of program evaluation. The development of the questionnaire is described elsewhere[24].

Observation checklist. An observation checklist on workshop content and participants' involvement was developed.

Appreciation survey. An 8-question survey addressing barriers to participation and interest in the workshop content was developed based on field notes. The appreciation survey was administered by the facilitator to parents enrolled in the VIE program nine months after the beginning of the implementation.

Analysis

Data from field notes, activity reports (open-ended questions), participant questionnaires and survey were analyzed with qualitative hybrid analysis combining deductive and inductive analysis[30, 31]. All qualitative data were segmented in 1 to 2 sentences and analyzed as one body text. For the deductive analysis, 453 segments were codified based on the components of the *Steckler and Linnan* framework[25]. The *fidelity* refers to the degree to which an intervention or program is delivered as intended. The *dose delivered* reflects implementation completeness or the amount of the intervention that is disseminated. The *dose received* refers to the extent to which participants are exposed to the intervention and their satisfaction towards it. The *context* (environmental factors) and *recruitment* procedures are documented for their potential impact on implementation. Assessment of *reach* provides evidence on whether and how the intended audience participates in the intervention or specific intervention components. Figure 1 provides an overview of the framework used for the workshop implementation process.

After, sub-themes were determined for each component by inductive content analysis. All the qualitative segments were codified by S.B.G. The codification was then revised by V.M. who was not involved in data collection, for inter-reliability evaluation. Themes were discussed until a consensus was made on the sub-themes. The quantitative data were expressed as descriptive statistics.

Results

Workshops Delivery and Participants Characteristics

Workshops were presented in French to a total of 17 participants. Characteristics of the participants are presented in Table 2 (in the Supplementary Files). Fifteen participants (88%) were parents, of which 11 (65%) were mothers. Four children assisted to the workshops (3 patients and 1 sibling) of which 2 were too young to answer the questionnaire. Two participants assisted to more than one workshop.

On a total of 45, 13 workshops (29%) were delivered and 32 (71%) were cancelled (Table 3 in the Supplementary Files). Over the 12-month implementation period, 7 of the workshops delivered (69%) were held with only the facilitator, without the chef (Table 3).

Twenty-six families out of 31 enrolled in the VIE program answered the appreciation survey (Table 4 in the Supplementary Files). One family could not be reached and 4 others dropped out of the VIE program before the survey was conducted. At the time of the survey, the mean time since diagnosis was 8 months (range of 1 to 14 months) (Table 4). Because of low the participation at the workshops, the data of the observation checklist were not collected.

Evaluation of the Implementation Process

This section details the perceptions and opinions obtained from the families and the facilitator. Data were collected using the questionnaires, report and survey. Results are presented according to each component of the process evaluation. Each qualitative segment could have been included under more than one theme.

Procedures of the workshops' promotion and recruitment. Three themes were identified for the recruitment component: 1) procedure description; 2) impact of recipes and; 3) availability of families. Workshops were promoted using wall posters in strategic locations in the hematology-oncology inpatient and outpatient clinics of the Division of Hematology-Oncology. Seventy-three percent (73%) of the families interviewed were aware of the workshops (Table 5 in the Supplementary Files). The facilitator visited the families enrolled in the VIE program to promote the workshop of the week. Families attending the common areas were also approached. Sixteen of the 17 workshop participants were contacted by the facilitator during the promotion tours. A recipe (one-pot mac'n'cheese) was mentioned by one mother participant as the main attractive element to the workshop. Flyers were also handed to the nurses in the outpatient clinic to encourage promotion of the workshops to families. Nurses and clinical dieticians were also notified each week.

Reach. Three subthemes emerged from the reach component: 1) impact of low participation; 2) target population and; 3) characteristics of patients. The reach of the population was low as only 1 to 2 participants attended each workshop (Table 2). The facilitator reported that this caused some presentation-related difficulties and affected the possibility for participants to interact. Language had a minor impact on the workshop reach: overall, only 4 parents were unable to participate to a workshop because they did not understand or speak French.

Subthemes related to the target population and patients' characteristics that either facilitated or challenged participation were described using observation notes and survey. Many surveyed parents reported they were cooking at home and that nutrition was a priority for them. Some mothers surveyed had professional cooking (n=3) or a dietician (n=1) education. This was not a barrier for participation but did influence participants' interests:

(Survey) One mother reported preferring the treatment-related themes because she had professional cooking training.

Some parents mentioned that being at the hospital with their spouse would help them assist to an activity. Other parents mentioned that the workshop was more relevant for their spouse, suggesting that the reach is not equivalent within a same family:

(Survey) I am not the one who cooks at home.

(Survey) My spouse is more present than me at the hospital.

Characteristics of patients also influenced parents' participation and interests. The most stated characteristics were patient's current health condition related to his treatment, allergies or lactose intolerance, as well as his pickiness. These conditions were mentioned as barriers for recipe tasting or for workshop participation.

Dose delivered. Three sub-themes emerged and segments were extracted almost exclusively from the activity report: 1) adaptations of the content and animation; 2) description of the non-divulged key messages and; 3) reason for not delivering the key messages.

In 7 of the 13 workshops, all the nutritional messages were covered (54%) (Table 3). Messages related to the prevention of foodborne infections were the most omitted. The reasons for not delivering the key messages included the unreceptiveness of participants, oversight from the facilitator, participant prematurely leaving the activity and difficulties performing the recipe.

The adaptation subtheme refers to the strategies used by the facilitator to adapt the messages and animation for the audience. For example, she gave personalized advice to take into account participant's comments and involved the children in the cooking demonstration. This did not alter the content of the messages delivered. Moreover, during one workshop, the content was adapted in order to address the parent's questions and knowledge.

Contextual factors. Five subthemes have emerged as contextual: 1) location and material; 2) medical or nutritional characteristics of the patient; 3) Logistics and time management; 4) parental presence required elsewhere and; 5) characteristics of the target population.

Difficulties related to the physical location, equipment and noises during the culinary demonstrations were reported as challenges by the facilitator. During the promotional tour, one mother and one nurse reported that it would be more convenient if the workshops would take place on the same floor as the inpatient Division of Oncology, rather than on the floor the activity was planned:

(Field notes) One mother mentioned that she thought this kind of activity was very interesting and that she wanted to participate. However, she could not attend because her child was immunocompromised and she was reluctant to leave her alone. She stated that she would participate if the activity would take place on the same floor as her child's room.

Difficulties related to logistics and time management were commonly reported by families. During the promotion tours, many parents stated that they lived far away from the hospital and would not come only to assist to a workshop. In the outpatient clinic, parents reported that, when visiting the hospital, they were generally busy with appointments in the morning and wanted to leave as soon as possible. One parent mentioned:

(Field notes) [Parents] always want to leave before hitting traffic. They corroborated that this consists in the principal barrier to assist to a workshop because they are otherwise interested [in participating to a workshop].

Lack of time was also a recurrent characteristic of the target population. Forty-two percent (42%, n=11) of the families surveyed mentioned that being too busy prevented them to participate (Table 5).

Availability and interests of parents were highly affected by patients' medical condition (Table 5). In the survey, 77% (n=20) of parents stated that expecting a visit from a doctor or a health professional at the time of the workshop would be a barrier for participation. A scheduled test or treatment would also be a barrier for 85% (n=22). For some parents, nutritional difficulties encountered by the child were a motivation to assist, while for others, their management was rather perceived as time-consuming and as a barrier:

(Field note) A mother stated that she is, in essence, interested, but at the moment, she believes she was more helpful by helping her child by focusing on his acute nutritional challenges.

The need for the parent to be at his child's bedside was reported in the appreciation survey as a participation barrier by 58% of families (n=15) (Table 5), regardless of the child's age. The presence of both parents was reported as a facilitator for workshop participation. One mother stated:

(Survey) It was our chance to be both present [at the hospital]: it made it easier to assist the workshop. When only one parent comes [to the hospital] with the child, it is more complicated to assist to a

workshop [for him/her].

The contextual factors highlighted the barriers and reasons that complexify parents' access to the workshops and helped explaining the general low attendance.

Fidelity. Four themes have emerged related to fidelity of the implementation process: 1) workshop animation; 2) recipes; 3) minimization of the burden related to participation and; 4) impact of low participation. The workshops had a mean duration of 51 minutes (± 13 minutes, range: 40-90), which was shorter than the planned 60 minutes (Table 3). The absence of the chef in 69% of the delivered workshops led to a shorter mean duration (46 ± 4 minutes, range: 40-50).

The facilitator described some difficulties related to animation in the absence of the chef. They principally referred to coordinating the delivery of nutritional messages with the recipe demonstration. Other difficulties reported were a less dynamic or fluid animation, omission of content and challenges in determining the best moment to answer participants' questions.

Sixty-nine percent of the parents (69%, n=18) were interested in tasting the recipes (Table 5). One participant mentioned that the recipe persuaded her to come to the workshop. Some parents mentioned the pickiness of their child was a barrier to taste new recipes. However, while the majority of parents stated that tasting was enjoyable, it was not the principal incentive for participation:

(Survey) [Mother] I would have come even though there was no recipe. However, it was appealing to me.

It was essential for the research team to minimize the burden associated with participation. On occasions, the facilitator adapted the time and content in order to accommodate participants' schedule.

Dose received. The dose received refers to the exposition and perceived utility of the intervention. In the questionnaires, 71% of participants (12/17) agreed they had acquired knowledge related to every key message (Table 6 in the Supplementary Files). Only 13% (2/17) stated they had acquired knowledge for less than half of the key messages. All participants (n=17) would recommend the workshops to other parents. For this component, the subthemes raised from the qualitative data were: 1) delivery mode; 2) interest and receptivity; 3) logistical and organizational context; 4) prior knowledge; 5) utility/non-utility of the workshop related to patient's condition and; 6) workshop themes.

When asked about their favorite delivery format, most parents surveyed preferred short web-based capsules (n=18, 69%, Table 5) in comparison with flyers only, face-to-face or videoconference. Families reported that videos were more appealing than written documentation because they are less time consuming and they can be watched whenever needed.

Data acquired during promotional tours or with the survey show that parents were interested in nutrition: only one parent stated that healthy eating was not his priority (Table 5). Besides, for 12 of the 13 workshops, the facilitator rated the participants' level of interest from high to very high (Table 3). In the

appreciation survey, many families expressed that workshops could be a nice distraction while being at the hospital:

(Survey) This kind of activity is very relevant to me because we are often looking for something to do in the hospital.

In general, there was interest for the activity, but the logistical barriers (e.g. having to stay with the child or living far from the hospital) complicated the exposition to the intervention. No pattern in terms of the day (week or week-end) and time (morning or afternoon) of presentation or in the workshop theme was identified in relationship with attendance. Also, families' preferences were very diverse when asked about what time of the day would be ideal to assist to a workshop. However, parents affirmed that it was easier to assist when the child was hospitalized rather than when he was an outpatient.

The perceived utility of the workshops was influenced by parents' prior culinary and nutritional knowledge. This was mainly related to foodborne illness prevention as 58% of participants reported not being interested by this specific content (Table 5). These parents stated they had received thorough instructions by the nursing staff and were already applying the principles at home. Conversely, other parents found that reminders of the rules for prevention of foodborne infections were helpful.

The perceived utility was influenced positively or negatively by the child's medical condition. Some parents reported that their child could eat everything, so they did not perceive the workshops as useful. Other mentioned that their child was picky and that this was a barrier to assist. Parents' interest towards the activity was also often related to treatments side effects:

(Field notes) One mother stated that, at the moment, her child was well and that she will consider [the workshops] if the child loses weight.

(Survey) The utility of the workshop is related to the treatment side effects and the child's eating habits.

Thus, 62% of the parents surveyed (n=16/26, Table 5) reported that the workshop theme was not related to the child's current condition, which was a barrier for participation. The survey showed that Changes in taste during cancer therapy, Meal fortification and Planning quick and economic meals were the most useful workshops for 38%, 31% and 27% of the parents, respectively (Table 5). Parents reported that the least useful workshops for them were Adapting diet to eating-related side effects of treatments (31%), Mediterranean diet and health (23%) and Planning quick and economic meals (19%) (Table 5). Of the families who stated that the least useful theme was Adapting diet to eating-related side effects of treatments, 25% also reported that their child did not suffer from these side effects. One mother specified that even though she did not find this theme useful, it could be for other parents.

Discussion

In our study, process evaluation has identified contextual and reach factors as the principal barriers to participation. Indeed, the characteristics of the target population were a subtheme that emerged from

these components. Clearly, the contextual factors and the profile of the population impacted the reach of the intervention. This included better parents' availability during the child hospitalization logistics and time constraints.

In Canada, between 2006 and 2010, the number of cancer diagnoses in children under the age of 5 was more than twice of those in older children and adolescents[32]. Young children require parental supervision, a reality that must be considered to assure the success of interventions in childhood cancer. Also, many children are immunocompromised and cannot leave their hospital room. Side effects, treatment schedules and appointments were also pinpointed as major barriers to participation. Conversely, parents requested access to nutritional information specific to their child's condition.

It has been reported that, during treatments, parents use a variety of strategies to make the child eat and often force them to eat[33]. Studies showed that from 5 to 60% of children with cancer suffer from malnutrition at one point during their treatments[34, 35]. In this study, we found that parents were highly interested in the themes of Meal fortification and Changes in taste during cancer therapy themes. Weight loss in a child with cancer is stressful for parents and can disrupt the routine of families[36]. Changes in tastes are also frequent and can modify the child's eating habits and lead to the consumption of foods high in fat and sodium[6]. This can affect meal ambiance and the child's quality of life related to the symbolic and cultural value of food[5, 37]. Other studies showed that pickiness and cravings were the principal difficulties reported by parents during treatments[1, 2]. In our study, parents highlighted the challenge to find information related to these problems, which explains the high perceived utility of these themes. Depending on participants, the theme Planning quick and economic meals was designated as both the most and least useful. It is possible that families who experienced the diagnosis longer ago further valued information related to general healthy eating. However, the small study sample did not allow data stratification to verify this hypothesis.

To our knowledge, this is the first study describing the implementation of an educational nutrition and cooking workshop program taking place early after the diagnosis. An expert consensus of the *Children's Oncology Group* revealed that the most valuable information for the parents soon after the diagnosis was directly related to the child's current care including the management of side effects and the prevention of infections[38]. As part of the interdisciplinary VIE program, the psychological intervention *Taking Back Control Together* was developed and refined based on a parents and healthcare professionals' assessments of the program limitations, benefits and needs for improvement[39]. The qualitative data revealed the need for parents to better manage their distress following the diagnosis in order to be more helpful for their child[39]. This supports findings, including ours, that parents' interests in knowledge are mainly centered on their child's medical condition[40].

Raber *et al.* described a hands-on in-camp culinary intervention destined for children with cancer, survivors and siblings[23]. They also proposed an alternative in-hospital setting activity. Children in the camp were highly interested in participating to the activity and the reach was high: all the activities reached the maximal participation, in contrast with our results. Differences in the target populations

(children vs. parents) and participants' availability (campers vs. caregivers) can explain the divergent outcomes.

Information collected with the activity reports revealed that 54% of the workshops covered 100% of the nutritional key messages. Low attendance mostly impacted the animation of the workshops rather than their content. Despite the low attendance, 88% of the 17 participants reported that they had acquired knowledge for more than 50% of the key nutritional messages. While the small number of participants does not allow measuring efficacy, these numbers offer encouraging data on the educational value of the curriculum.

Basic nutritional knowledge is a prerequisite for behavior changes[41, 42]. Also, adding culinary demonstrations in a nutritional intervention has helped participants to use the given advices and to increase culinary confidence[43]. Parental involvement in nutrition interventions targeting children is essential because their knowledge and confidence influence the nutritional value of the food offered[44, 45]. Interventions involving only the parents were found at least as efficient as the family-based ones for obesity treatment[45].

In the VIE program, the workshops were developed as a complementary resource to clinical follow-up with the concern of not increasing the burden for families. Parents in our study often felt overwhelmed which could explain why their interest in the workshops did not transfer into participation. Based on the results of our feasibility study, we conclude that because of the many barriers encounter by parents, workshops in a face-to-face format are poorly feasible in the context of pediatric oncology. It is possible that using a more accessible mode of delivery would better target this population. It has been reported that large amounts of written or verbal information negatively affect retention during treatments for childhood cancer[46].

Accordingly, as a result of the process evaluation, we propose that using web-based videos could be successful. Their feasibility and efficacy have not been assessed in this population, but was found positive in populations of parents with premature infants[46, 47]. Our survey also revealed that a lot of parents preferred this mode of delivery. In the future, assessing the impact of a web-based video program on knowledge acquisition, food intake and culinary competency would provide a measure of its efficacy.

Our study has some limitations. The majority of participants to the workshops and the VIE program expressed a high level of interest in nutrition, which may not be representative of all families, a well documented bias of any nutritional intervention. Also, the facilitator was involved in data collection and analysis, which could potentially introduce bias. Different strategies were used to minimize this caveat including using multiple methods of data collection, gathering the perceptions of participants, non-participants, interveners and of the facilitator, and finally using a strict procedure of qualitative data intervality analysis[28]. Furthermore, self-reported barriers could have been subjected to desirability bias although the facilitator specified that the survey aimed to improve access to the activity. Also, the heterogeneity of the population surveyed in terms of diagnoses and of time since diagnosis could have influenced the perceived utility or the time available for participation.

Conclusion

This study presents the feasibility of nutrition education and cooking workshops in pediatric oncology, a population that has confronted complex emotional and organizational challenges. Because the reach was low, we could not conclude on the efficacy of the workshops to increase the perception of knowledge acquisition. However, the process evaluation allowed us to document the need for families to access reliable nutritional information when it is relevant for them. As a result, the workshop content and key-messages have been integrated in short video capsules that are available on the VIE program website. This adaptation was achieved to address the main barriers encountered by parents.

In conclusion, our study showed that nutrition interventions targeting families confronted to childhood cancer should be adapted to reduce the barriers they encounter in order to improve access to information, reach and delivery. Our results showed the importance of process evaluation when developing innovative programs in vulnerable population to ensure they are appropriate and optimized for real-life conditions.

Abbreviations

SD : Standard deviation

VIE : Valorization, Implication, Education

Declarations

Ethics approval and consent to participate

The VIE study was approved by the Sainte-Justine University Hospital Center Institutional Review Board. A consent form was signed by participants (guardians/parents) enrolled in the VIE project.

Consent for publication

Not applicable

Availability of data and material

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

SBG collects and analyzed participants data. SBG analyzed the qualitative data and VM and SBG discussed of the emerged themes for inter-reliability. All authors read and approved the final manuscript.

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Tables

Due to technical limitations, tables 1 - 6 only available as downloads in the supplemental files section.

Figures

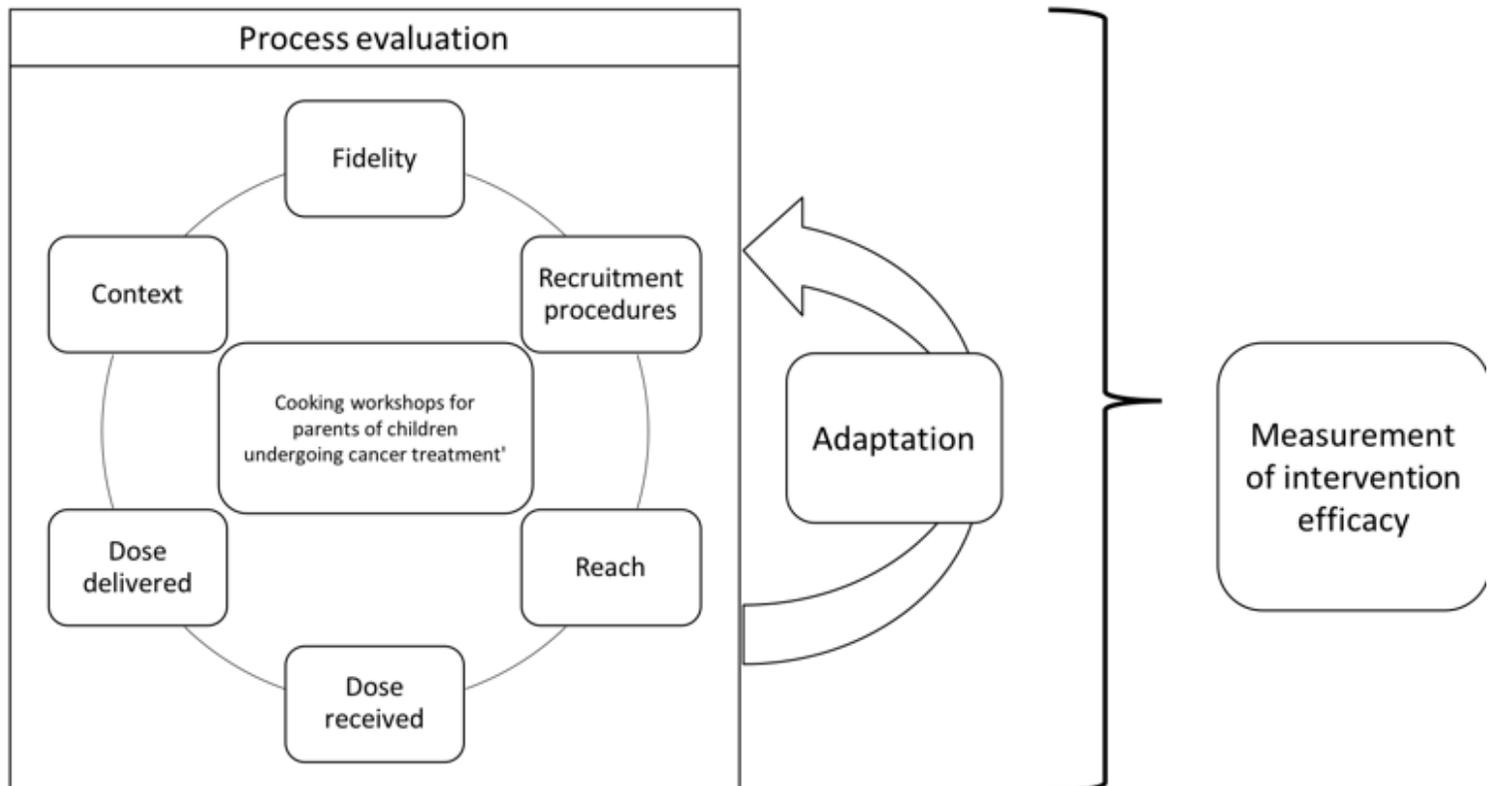


Figure 1

Figure 1. Schematic representation of the workshop implementation process

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