Explaining the Dimensions of Social Support for Breakfast and Healthy Snacks in Students: A Qualitative Study

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Abstract

Background: breakfast elimination as well as consumption of low-value snacks is ever increasing among adolescents. This study sought to explain the dimensions of social support for breakfast and healthy snacks among students.

Methods: A qualitative research was conducted in Isfahan, Tehran, and Khorramabad high schools in 2017--18. Data were obtained from five focus group discussions and 35 in-depth interviews as well as semi-structured interviews with students of both sex, parents and school authorities. The data simultaneously analyzed using conventional content analysis in three stages including preparation, organization, and reporting. Prolonged engagement, maximum variation of sampling and member check were the enrichment factors of the research.

Results: Three main categories emerged. First, family supports with sub-categories of family in the school programs as well as mother-sponsored support and family life patterns. Second, school supports with sub-categories of instrumental and informational support. And third, support of other community organizations with sub-categories of intra-department coordination and mass media.

Conclusion: By providing exciting advocacy opportunities such as holding an exhibition and building families' confidence in the safety of school nutrition, school can attract family partnerships. In addition, promoting healthy eating needs multi-level supports such as mass media, municipalities, police, and the school's renovation office as well as the coordination of these organizations with health sector.

Background

Breakfast is recognized as the most important meal of the day, and its consumption is considered as an essential indicator of healthy lifestyle. In recent years, breakfast has not
been generally eaten and tendency to replace it with snacks of no value has increasingly
grown among children and adolescents. It is reported that between 8% and 30% of Iranian
children and adolescents do not eat breakfast [1, 2]. Missing breakfast is often associated
with lower levels of physical activity, risk factors for heart disease and high body mass
index (BMI)[3, 4]. In addition, snacking, which is defined as eating foods between the main
meals, is known as one of the most important sources of calorie intake [5, 6]. The
consequences of high consumption of snacks including obesity, dental caries and chronic
diseases are completely proven [7]. However, use of healthy snacks during the day leads
to increased performance, memory enhancement and increased energy among children[7].
Social support may be the main factor that influences the maintenance of health
behaviors. Previous studies have shown that social support plays an important role in
consumption of healthy foods among adolescents [8, 9]. Not supporting others to access
healthy foods such as fruits and vegetables is one of the main obstacles for students to
consume safe nutritions [9, 10]. Researchers believe that social support to access healthy
foods is a predictor of right nutritional behaviors [11, 12]. Therefore, proper identification
and explanation of it’s dimensions can be measured in order to improve the condition of
breakfast and snack consumption.

Since supporting healthy eating is a complex subject and is related to social,
environmental and psychological aspects, the most appropriate approach to better
understand its’ dimensions can be qualitative methods with an inductive approach [13].
Therefore, the present study was conducted to determine the dimensions of social support
for eating breakfast and healthy snacks among students.

Methods

Design

The study was a qualitative research with a view to conventional content analysis
Participants and Context

This study was conducted among the students of eight high schools including five for females and three for males. The students were residing in Tehran, Khorramabad and Isfahan at the time of the study from 2017 to 2018. Participants included 11 students with the mean age of 14 years (7 girls and 4 boys), 11 mothers, 5 fathers, 5 school vice-principals, 8 teachers, as well as 7 health education instructors, 3 health authorities from the health center, 3 buffet keepers, and 7 school principals. Purposive sampling was used to select the participants. People who did not habitually consume breakfast for long periods of time, or who consistently performed this behavior and those who had been sponsoring this behavior were intentionally included in the study. Inclusion criteria consisted of having enthusiasm to participate and ability to clearly express experiences; whereas reluctance to continue to participate and the inability to clearly express experiences were the exclusion criteria. The investigator deliberately continued sampling based on the Saturation of information. Data was required based on the initial findings to reach the level of data saturation [14].

Data Collection

The data were collected through 35 in-depth interviews and five focus group discussions. Data was collected solely through recording participants’ voices. No one was interviewed twice. The interviews and focus group discussions each lasted from 20 to 60 minutes. Interviews and focus groups discussion in Isfahan and Khoramabad were in person; whereas interview with participants resided in Tehran was done through a phone call. The interviews and discussions were done in different places based on access to a comfort area such as school counseling room for students and school office for the school council. All interviews and focus group discussions were conducted in Farsi. Focus groups
discussion with female and male high school students was separately conducted in 2 groups. Likewise focus group discussion with School Council such as principals, vice-principals, teachers, health educators, student representatives, school buffet keepers and parents were done discretely in 3 groups. In order to conduct interviews and focus groups discussion, a moderator’s guideline introduced general open questions such as “How is breakfast and snack behavior in the family?”, “What are the plans for a healthy breakfast and snack at school?”. Then the moderator’s guideline used supplementary probes. Different probes in different focus groups were used depending on the responses given by the participants.

Data Analysis
The process of analysis was synchronous with the data collection, which was carried out in three phases of preparation, organization and reporting through a conventional content analysis method. In the preparation phase, an interview or focus group discussion was considered as a meaningful unit for analysis. Each unit was reviewed several times for immersion. In order to organize the data, open-coding was used. The coded data then were recorded in coding sheets for a later reference, and grouping began after several interviews. By repeating the mentioned process for each new interview, some topics were added until the final pattern emerged. Comparing and merging groups reduced the number of categories. Sub-categories were formed based on the similar characteristics and the name of the categories was indicative of their contents [15].

Rigor
Prolonged engagement and spending sufficient time to communicate and collect data helped build trust and rapport with the participants and provided in-depth data collection. Maximum-variation sampling was used based on employment status of the mother, socio-economical status of the family, number of children and parents, and the city or town of
residence.

Ethical Considerations

After obtaining permission from the Ethics Committee of Isfahan University of Medical Sciences (IR.MUI.REC.1396.3.420), we began the study. In the case of objectives, research methodology, consent process, adequate explanation was provided. Although initial consent was obtained, during interviews, participants were asked about their satisfaction and convenience of participating in the study. Participants were assured that they can draw from the study at any stage they wished.

Results

Based on the results of the qualitative research, three main categories emerged about the behavior of breakfast and healthy snacks including support of family, school, and community institutions.

1-Family Support

Three subcategories including participation in school programs, mother’s special support and family life patterns emerged.

1-1-Participation in School Programs

That includes two subcategories including participation in incentive programs and cooperating in providing healthy snacks.

1-1-1-Participation in Incentive Programs

Providing the ground for families to participate in school encouragement programs promotes healthy eating habits among their students. The school’s health educator said, “Last year we had healthy food festivals. Parents came from different provinces. They prepared healthy, traditional foods at home and brought them to school....the kids were exposed to healthy foods”.

1-1-2-Cooperating in Providing Healthy Snacks
Quotes indicate that the collaboration of families with the school was weak in providing healthy snacks for the students. This concept emerged with two subcategories.

Disagreement with Providing Warm Food at School

Parents did not agree with providing warm meals at school because they believed it cause obesity and illness in kids; therefore, it is required to assure them that is not the case. The school’s deputy said: “The student was already ill or poisoned..... If he or she consumed a warm meal at school, then we will be held responsible for giving the student contaminated food.”

Lack of Parental Participation in Payment

Participants believed that spending healthy snacks at school was costly. The school deputy said, "Many students cannot afford to buy expensive snacks, like packages of nuts, sold in school cafeteria every day." said a father: “It is better to encourage the kids to bring a healthy snack from home”.

1–2-Mother’s Special Support Emerged Under the following Sub-Categories:

1–2-1. Mother’s Support in Promoting Healthy Snacks in School

The greater the mother’s willingness to pay for material and non-material costs the greater the protection of the behavior of healthy snacks. The mother stated in her commitment to the work: “The kids have to take items like bread, milk, butter, and jam to school .... it may incur intangible costs, for example, mother has to wake up early and dedicate some time to this work”.

1–2–2-Mother’s Support in Promoting Breakfast at Home

Mothers expressed their experiences in raising the morning appetite of their children. A mother expressed her experience in breakfast diversity: “I try to make breakfast different each day,” says the mother, “for example, I’ll prepare fried eggs or an omelet once a week; if I have time, I will make beans ... It’s a colder season now, and kids will prefer
warm meals.”

1-2-3- The Role of Mother’s Career in Eating Breakfast

The results of this study showed that the mother’s employment had both positive and negative consequences in this regard. An employed mother said her experience: “said my daughter, “the home maker moms do not wake up to prepare breakfast........because my kids are old enough and can prepare breakfast on their own; so that the mothers do not wake as often....the kids sometimes do not eat breakfast at home before they go to school”.

In the other hand, due to the absence of mothers at breakfast time during school holidays, kids may not take eating breakfast that serious. An employed mother said: " I prepare breakfast for them before going to work, and I will call them at 9:00 AM and again at 10AM to check if they have their breakfast, they answer my phone, but they go to sleep again ...

Noon time when I go back home, I see breakfast is left untouched.”

1-1-3. The Family Life Pattern: This concept emerged with 3 sub-categories including the pattern of sleep, breakfast and snack consumption in the family.

3-1-3-Sleep Pattern in the Family

The family’s sleep pattern is important because it affects the behavior of breakfast. A mother said: “Parents should be lawful and set the time for sleeping and awakening, the children are also regulated......We sleep late, so the kids are also late to go to bed ...., they wake up late and they do not like to have breakfast”.

1-3-2- Breakfast Pattern in the Family

Behavioral patterns such as the habit of eating breakfast in the family affect children’s behavioral habits. The mother expressed her experience “Because my dad was a military one and woke up early, they woke me up early even in summer; this was used to it and I always had my breakfast.”
1-3-3 Snack Pattern in the Family

If families at home have a habit of eating amongst them, they will usually eat more healthy snacks. The mother said, “We must first eat our healthy food ..... For example, I’ll slice the fruit at home. I’ll start eating myself first, then kids will be eating well.”

2) SCHOOL SUPPORT

Two categories of physical and information support appeared about eating breakfast and healthy snacks

2-1- Physical Support:

School support in providing facilities came up with 2 sub-categories including a healthy snack program and a school buffet.

Healthy Snack Program

The program runs in health promotion schools, where the school allocates the first class to a healthy snack by dialing a ringtone, 10 minutes from the time. The director of the school said about the necessity of the program: “We had a diabetic student who had not eaten breakfast and was in a bad physical state........ So kids who do not have breakfast will alternatively have healthy snacks with their teachers”

The school’s supervision of the healthy and varied food that students eat in a healthy snack is another benefit to the program.”The food that the kids bring to school should be in accordance with the school’s permitted list of foods including both authorized and unauthorized food listings. ....For example, I once wanted to give my daughter Falafel to take to school, and she said that she could not take it because the school does not allow it”

School’s Buffet

Creating a health facility to provide healthy snacks in school faces challenges; the school’s deputy said, “Warm food is a premise that we cannot give up....... One person is
required to work at all times. Cooking warm food needs requires a lot of space which we need to make available". Participants offered solutions to school buffet management when there were not enough facilities. For example, a father suggested a vending machine: “Educational offices or parents who can afford to fund it or an outside investor are required .............they would put useful things inside the machine; it’s a new added bonus to the school which would benefit both the kids and the school .........”

2-2- Information Support

The school advocacy programs emerged with two sub-categories of teacher co-operation and school advocacy programs.

2-2-1. Teacher Co-operation in Promoting Behavior

Participants pointed to the role of school teachers as a formal source of education that influences children. A mother said: "My kids said, for example, that the teacher advises them what to eat..I believe that kids interpret advice from parents and kids differently, as they tend to ignore a lot of my advice" (school health officer)

In order for teachers to continue to cooperate in this field, they must be encouraged to attend school. “There are teachers who are interested in health education while there are teachers who need more encouragement so that they feel they.......Now there is no need for encouragement to be material, to be spiritual it has its impact, teachers are elected for scientific work, but not for this " (nurse).

2-2-2. Educational Programs in School with 3 Subcategories Emerged.

Educational Activities According to Health Calendar

According to the health calendar, educational activities are conducted in schools. A student about the Health Day program said: “Keep breakfast in school, and eat your healthy breakfast.”

Training as Needed
Participants acknowledged that they do not always treat the health calendar; they also said they would not wait for the directive. They said they followed educational activities according to school reports or parenting requests. The school’s health educator said, “Some parents reported that our children do not have breakfast. We asked a nutrition expert to talk to the kids.”

Creating Amusement Space

Quotes show that creating a fun space makes enjoying healthy school snacks, and this promotes more and more healthy snacks. For example, the mother said, “My son is looking at healthy snacks at school as something fun … something that makes them happy like music … besides, he finds the snack very tasty “

3) The Support of Community Institutions: emerged with two sub-classes, including inter-institutional coordination between the community and mass media.

3.1 Inter-institutional Coordination includes two subcategories including monitoring the warm supply and distribution centers and standard buffet construction. Contributors acknowledged that kicking round-the-clock vendors around the school require the full involvement of community departments. A participant expressed his experience “We took a court order to fight with the dealers and the municipality, the police and employer were involved. Unfortunately to our chagrin, the vendor had to be removed " (provincial school health representative).

Building a Standard School Buffet

Participants stated that due to poor cooperation of renovation organization with us, renovation of the school to provide schools equipped with a standard buffet may not be feasible. Said a participant“They built a new school but unfortunately they don’t have a buffet”; He also mentioned: “If a standard buffet is allowed, we will allow you to cook and distribute the school’s warm food, not even at home or in the non-sanitary place of food”;
said a contributor, “they will build a new school but unfortunately it will not have a buffet” (headmaster).

3-2. Local Mass Media

Participants believed that promotion through local media at the place of residence and education of children plays an important role in the culture of healthy eating. A mother said, “If you go to a school or neighborhood through a poster and hold a healthy food show, it will have more meaningful impact on your body”.

Discussion

Three general concepts such as family, school and communities’ organizations support emerged in explaining the social support dimensions of breakfast and healthy snack behavior.

The first concept explained the role of family support. Previous studies acknowledge the parental role in supporting this behavior, in addition to encouraging and promoting, to create an appropriate physical environment called children’s access to healthy food at home and school [16–18]. Attracting family participation in incentive school programs, such as holding a healthy nutrition festival and providing family snacks by parents in school, both reduced the costs and supported this behavior in collaboration with the school [19].

Presence and behavior of relatives like the mother can contribute to the promotion of healthy breakfast and snack by providing a variety of social supports, including instrumental, emotional and informational supports [20]. According to the present study, if a mother is employed, it is a positive outcome because it causes mothers to have regular breakfast each day and get along with their children. Having a mother next to a child at breakfast time is an important factor in maintaining this behavior [21].

Family life patterns had impact on improving the behavior of pupils’ healthy breakfast and
meal. The findings showed that when students eat snacks in the family, they eat healthier foods. A systematic review showed that the number of healthy snacks that parents consume has the greatest impact on healthy snacks in teens [22]. Moreover, the current research showed that the rule on sleeping and waking hours as well as having breakfast in the family are both effective on development and continuation of these behavior among their offspring. [23][22][21] The parenting style and health rules in the family all affected the children’s behaviors [24]. On the other hand, incoherent family structure such as an underestimated parenting status is associated with reduced intake of breakfast among the students[25].

The second contributing factor was the school support. In the present study, on one hand, school monitoring on foods in the healthy snack program facilitates healthy nutrition at school. On the other hand, families work to promote healthy eating habits in partnership with creation and implementation of healthy school nutrition strategies such as the use of a vending machine as an attractive technology for children. Previous studies also acknowledged that the availability of health facilities in the school increases the willingness of students to eat a healthy snack at school in friend groups [26, 27].

A combination of incentive programs by the educated staff, especially teachers, and their material and spiritual encouragement has been effective to sustain these trainings and motivate them to make the school a valuable place to provide healthy nutrition interventions in a cost effective method [28]. Existing incentive school programs such as fun incentive programs based on a health calendar, such as a breakfast day or a healthy eating festival, as well as creating a relaxing ambiance during a healthy snack at school, such as playing a happy music, will be more attractive which will promote the behavior. It should be noted that this result is consistent with those of previous studies which suggest using unhealthy foods to enjoy certain situations, such as attending a party, makes a
great sense of happiness [29].

Intra sectorial coordination between community organizations and mass media was a factor in defining the concept of protecting community institutions. The coordination between education and renewal office, municipality, police, and health sector will make food supply and distribution centers more functional in this area. Community-based cultural and structural factors in homes, schools, child care settings, children’s health care centers, and the market all influence the food the children receive[30].

Regarding the role of mass media, parents in this study stated that healthy nutrition education is better to be performed in children’s place of study and living. Evidence suggests that the existence and propagation of a product in a place of life increases the likelihood of its selection. Exposing to advertisement only once is not enough and cannot stimulate the behavior of children. While, it needs to be repeated, and exposed to at least 2 weeks in order to maintain it. Therefore, consideration should be given to this period of time for the promotion of healthy nutrition at the community level. In addition, education should have an ever-increasing presence in children’s lives, so discussions about it in the family and at school are important factors that influence this behavior[31].

Conclusion

The existence of bilateral communication between the family and school encourages more collaboration between the two institutions in support of healthy eating habits of students. Emerged concepts are applicable in development of ecological health promotion strategies include family, school, and community organizations such as school renewal organization, municipality and education, in order to promote healthy eating habits and students’ eating habits of snacking.

Abbreviations
BMI: Body Mass Index

Declarations

Ethics approval and consent to participate: Informed consent was obtained from the parents. Consent to participate was verbal. The parents consented to the recording of the voices of the students during interviews. The Ethics Committee of Isfahan University of Medical Sciences approved the study protocol with the approval number IR.MUI.REC.1396.3.420.

Consent to Publish: Not applicable

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the corresponding author on a reasonable request.

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Tables

Table 1. Dimensions of Social Support for the Behavior of Healthy Breakfast and Snacks
| Sub- Categories | Categories |
|----------------|-----------|
| Disagreeing to Cook Warm Meals at School | Collaborating with School in Providing Healthy Snacks | Parents Participation in School Program |
| Lack of Parental Participation in Paying Costs | | |
| Participate in School Incentive Plans | | |
| Mother's Support in Promoting Healthy Snacks in School | | Mother Support |
| Mother's Support in Promoting Healthy Breakfast at Home | | |
| Mother's Job Role in Supporting Behavior | | |
| Snack Pattern | | Family Life Style |
| Breakfast Pattern | | |
| Sleep Pattern | | |
| Healthy Snack Program School Cafe | | School |
| Physical Support (availability of healthy eating facilities) | | |
| Teacher Co-operation in Promoting Behavior | | Information Support (collaboration of school management in breakfast incentive programs) |
| Educational Activities according to the Calendar Training as Needed Creating Recreational Climate | | Incentive Educational Programs available at School |
| Building a Standard Buffet Supervising Warm Food Providing Centers and their Distribution Centers | | Inter-sector Coordinating |
| Mass Media: Local Media | | Community |