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AN ACTION RESEARCH ON THE DEVELOPMENT OF HEALTHY NUTRITIONAL HABITS IN PRESCHOOL STUDENTS

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Abstract:
The preschool is a very important period for developing nutritional habits in adulthood. They start coming to school after acquiring certain nutritional habits. When new preschool children were observed in the feeding environment, it was observed that they avoided eating certain foods. For this reason, it was decided to conduct an action research on students' nutrition habits. The research questions What are children's food choices and eating preferences at the beginning of the semester?" and "How did students' nutrition habits change after the implementation?" were answered. The study is an action research conducted to find a solution to a problem encountered by a teacher in her lessons. The participants of the study consisted of 14 students attending a kindergarten in Amasya city centre. The data were obtained through observation forms prepared for teachers and parents to determine the food preferences of preschool students at the beginning and end of the semester. Students' preference variables for the 54 foods offered to students at the school were determined before and after the intervention. According to the findings obtained from teacher observations and parents' observations, it was concluded that children's preferences for 54 foods were effective in their positive and high-level consumption preferences. The least preferred foods at the beginning of the semester were mostly vegetables (parsley, leek, vegetable soup, green lentils, broccoli, eggplant, cauliflower, spinach). The frequency of consumption preference was high in 46 of the 54 foods offered on the school menu (f=12, f=13, and f=14).

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1. Problem formulation

Nutrition (what people eat) is one of the main factors affecting health. If people eat a healthy diet, they can avoid many diseases and can live longer lives free from diseases (Dixey, Heindl, Loureiro, Pérez-Rodrigo, Snel & Warnking, 1999). Nutrition is an important environmental factor in early physical and mental growth and development. Foods contain substances necessary to build and maintain the body's tissues (protein, iron, and calcium), energy for physical activity and metabolism (fats and carbohydrates), and vitamins and minerals that regulate body processes. Food and nutrition contribute to better school performance by improving children's potential learning abilities (Pollitt, 1990). In the modern world we live in, opting out of healthy nutrition rules both in institutions and in the family leads to a decrease in the quality of nutrition, which has negative effects on the development of children (Pishcheeva & Denisova, 2007).

Raising healthy children is essential for societies to build their future. Children's health and ability to become healthy adults depend on their growth in a healthy environment starting from the prenatal period (Kutluay Merdol, 2012). The preschool period, which corresponds to the early ages of children, is one of the most sensitive periods of life, in which it has an impact on many developmental areas. In this period, individuals acquire many habits that support their participation in life in the future. One of these habits is nutrition habits. Early childhood is an essential period in which children's eating habits develop, they begin eating with their friends outside the home, their physical, cognitive, and social growth and development accelerate, responsibilities increase, and a healthy life for adulthood is shaped.

Childhood is of critical importance as it is the foundation of nutritional habits. The education to be given at this phase is very valuable for a child to become a healthy individual, because the nutritional habits acquired in childhood continue into adulthood. As Kaya (1999) states, nutritional habits acquired in childhood can affect the later periods of the child's life and form the basis of nutritional problems that will arise in the future. In the preschool period, the child acquires basic habits about himself/herself and transforms these habits into acquired behaviours as they are repeated over time. Parents provide the setting for their children's early experiences with food and eating. Many studies have shown that children's eating behaviors are strongly influenced by the family environment (Scaglioni, Salvioni & Galimberti, 2008). Parents can foster healthy eating behaviours and healthy or unhealthy weight development while providing their children with settings that encourage their development (Fisher & Birch, 1999).

Children in early childhood are nutritionally dependent on their families. Therefore, the correct nutrition habits to be acquired by families form an important basis for children to lead healthy lives in the future (Güneysu, 1982; Tunçdoğan & Tunçdoğan, 1985; cited in (Güneyli, 1988). Parents' food consumption and their own nutrition habits

directly influence children's food choices and nutrition habits (Kobak & Bek, 2015). During this stage, the child just becomes familiar with foods, and the foundation of their nutritional habits is laid. At the same time, as a child begins to develop certain and definite attitudes towards foods, which foods he/she like and dislike are determined, and the positive and negative nutritional behaviors acquired become influential for later years (Scaglioni, De Cosmi, Ciappolino, Parazzini, Brambilla & Agostoni, 2018). Since preschool children are dependent on the family in terms of the qualities mentioned, it is important to emphasize the impact of different parental factors on children at his stage. In this stage, how children are fed as well as which food they consume is also important (Kanioğulları & Budak, 2015).

When the nutritional behaviours of preschool children are examined, it is observed that they begin to have certain and definite attitudes towards foods and that they like vegetables the least among food groups. In addition, children in this age group do not like to consume mixed foods. While they prefer to see the food in a way that they can recognize it, they like to eat it with their hands. When presenting vegetables to children, mothers should pay attention to the way they are cooked and served. Children at this stage generally do not want to eat vegetables such as cabbage, cauliflower, leek, or celery, and they are sensitive to sharp tastes and smells. They prefer raw vegetables such as tomatoes and carrots more than cooked vegetables. Serving such vegetables in thin slices facilitates consumption. Another issue that parents should pay attention to in this period is that the child should not be harassed because they do not like vegetables or because they do not eat them. In summary, it should be remembered that preschool children are meticulous eaters (Kutluay Merdol, 2012).

Food preferences begin early in life and change as we interact with parents, friends, and peers. Further experiences with different people, places, and situations often cause us to expand or change our preferences (Kittler, Sucher & Nelms, 2011). It is necessary for teachers to accept that children who engage in the learning process in the preschool period by acquiring various behaviours have some nutritional problems in the first period of school. Interacting with their peers for a certain period of time during the learning process and feeding times will provide an opportunity to eliminate some of their problematic behaviors. Ağgül Yalçın and Yalçın (2018) explored the problems that preschool teachers face in their classrooms related to nutrition, and their findings showed that teachers regard children's food choices as the most common problem. In Turan's (2016) study, it was revealed what the favourite foods of children are according to the opinions of families. According to the data obtained, 77.2% of the families (f=244) answered yes to the question of whether there are foods that preschool children do not like. Furthermore, the foods that children dislike were listed as vegetables (39.2%), meat and meat products (7.9%), legumes (7.3%), olives (7.3%) and celery, broccoli, okra, and artichoke (5.4%). In the context of the results obtained, it is possible to state that it is necessary to provide children with effective nutrition habits in the early period, both in the family and school environments. On the other hand, strategies and practices

appropriate to the developmental characteristics of the age should be preferred while gaining nutrition habits.

Children actively participate in the process of eating and acquiring nutrition habits. Kittler, Sucher, and Nelms (2011) emphasize the effects of different experiences on preferences. Akder, Meseri, and Çakıroğlu (2018) emphasize the effects of interventions that require the active participation of the child in addition to classical nutrition education, while revealing qualified educational tools that can be used in school-age childhood. Dixey, Heindl, Loureiro, Pérez-Rodrigo, Snel, and Warnking (1999) used games related to nutrition, games and games and dances for remembering each other to ensure interaction among participants while implementing a nutrition program for children. Although simple visual exposure to various foods has a positive effect on food acceptance among children, it is considered more effective to use processes that require physical contact with food and related tastes (Cooke, 2007; Osborne & Forestell, 2012: cited in Braga-Pontes, Custódio & Graça, 2020). Practices such as tasting foods, creating drawings related to tastings, listening to stories, playing games, observing pictures of food, reading stories and examining books are very important activities for introducing foods. In a meta-analysis study, Nekitsing, Blundell-Birtill, Cockroft, and Hetherington (2018) determined the strategies to increase vegetable consumption for preschool children aged 2-5 years, and they listed these strategies as gardening, cooking, play activities, repeated exposure to the taste of food, card matching, complementing the encouraged vegetable with another food that the child already likes, modification of food services (the way food is presented to children), use of rewards (social or tangible, e.g. stickers or toys), modelling strategy (parents or cartoon figures eating the promoted food), the opportunity to choose between two vegetables - offer variety (the child can choose to eat only one vegetable or a mixture of several vegetables), and attractive visual presentation. In a study conducted by Yien, Hung, Hwang, and Lin (2011) using computer games, they found a significant effect of the interaction of elementary school students with computer games on nutrition knowledge in the experimental group. Although it is known that providing nutrition education increases children's nutritional knowledge, it is stated that multifaceted interventions would be more beneficial (Contento, 2007; Haden, 2006; cited in Walters & Stacey, 2009). In summary, studies in the literature emphasize the preparation of training and interventions that will attract children's interest and actively involve them. In addition to providing nutrition education, providing children with hands-on experience with food is considered an effective strategy in the acquisition of healthy nutrition behaviours. Within the scope of the current study, “guess the taste game”, “make your own pickle activity” and “picnic activities” were carried out, and they were consistent with the effective practices emphasized in the literature.

2. Statement of the Problem

The aim of this study is to determine the nutritional habits of preschool children and to provide them with balanced nutritional habits. The main rationale for conducting this study was the observation of a wide range of variable reactions of preschool students, such as choosing food at feeding time and not preferring to eat some foods at all, by the teacher of the course. Depending on the problem situation, changing the eating habits of preschool children in line with the desired qualities has revealed the purpose of conducting this research. Depending on the problem stated in the research, answers to the following sub-problems were sought:

- How are preschool children's preferences for consuming various foods at the beginning of the education period?
- Do the teacher's practices affect preschool children's preferences for consuming various foods at the end of the education period?

2.1. Importance of Research

It is thought that the practices carried out in order to gain nutrition habits in the preschool period will contribute to the change in children's nutrition habits. In particular, it is expected that learning the tastes of foods that children do not eat will increase the frequency of food preference in children and contribute to the development of nutrition-related developmental areas with balanced nutrition of the child. In addition, the results of the implementation will contribute positively to children's nutrition habits and will contribute to preventing children from being exposed to such negative behaviours based on the assumption that the family may show behaviours that may negatively affect children, such as getting angry, yelling, and forcing children to eat during the feeding process. On the other hand, it will provide a perspective for teachers to carry out conscious activities, especially for the child who spends almost all of his/her educational time with the preschool teacher in the early years.

3. Methodology

3.1 Research Model

This study aims to reveal the preferences of preschool children about whether or not to eat various foods and the effects of the practices of the teacher during the semester on children's preferences for consuming various foods. This is why the research is action research. Frost (2002) states that action research involves a systematic process of thinking, questioning, and acting on the part of individuals about their professional practices. In the classification of quantitative and qualitative research, action research most often falls in the realm of qualitative research because action researchers study the world (their schools and classrooms) as they find it. Even if quantitative data are obtained, action researchers generally do not shape the environment to isolate variables (Johnson, 2012). McNiff and Whitehead (2010) argue that when we want to learn something we do not yet

know, we conduct research and then explain what we have learned and how we acquired the knowledge we have learned. This perspective applies to all research, including action research. Action research is conducted by practitioners who see themselves as researchers. In this way, action research differs from traditional social scientific research, which views a social situation as something that is external and needs to be understood and defined. As a researcher from the inside, a practitioner has a purpose that contributes to the development of ideas and a deeper understanding of what they are doing.

3.2 Participants

The study consisted of a total of 15 preschool students, 8 boys and 7 girls, in the age group of 4, who started their education in a preschool education institution in Amasya province. In the presentation of the data, the students were coded as S-B (student Bülent), S-BY (student Bülent Yiğit), and S-Ma (student Malik). The names given in the separator are not the real names of the students in the class.

3.3 Data Collection Tools

In the data collection process, an observation form for teachers and parents was used to determine children's food preferences at the beginning and end of the semester. In the observation form, the fruits, vegetables, and some foods offered to the students during the lunch hour at the school where the students were studying for one semester were listed, and the teachers and parents of the students were asked to mark their nutritional preferences at the beginning and end of the semester. During the data collection process, the teacher conducting the action research observed each student at both the beginning and the end of the semester. The teacher assessed the students' food preferences from a selection of 54 items offered on the school menu at these two points in time. Additionally, information about the students' food preferences at home was gathered from their parents before and after the implementation of the action research.

3.4 Analysis of Data

The data obtained in the study are at the classification level, and frequency and percentage values were used in the analysis of the data. The teacher observation results and the findings obtained from the parents at the beginning and after the semester were compared and presented.

3.5. Implementation Process

It was previously stated that it is an action research involving the teacher's practices related to a problem identified in the classroom. Lewin (1948) mentions 4 commonly followed stages of action research. He lists these stages as plan, act, observe and reflect. The planning of the research was carried out by identifying the problem, determining the research questions, research methodology, determining the research group, and determining the studies to be carried out within the scope of the research problem. In the second stage, the practices put forward within the research problem were put into

practice in the process. During the implementation process, the researcher, who is also the preschool teacher, continuously observed the students and the research data were obtained by monitoring the effects of the actions in the planning. At the end of the implementation, the results of the teacher's observations and the data obtained from the parents' opinions were analysed and reported.

In the study, it was noticed by the teacher that the students in the 4-year-old age group did not prefer the foods offered to them for nutrition at the beginning of the semester and that the students' nutrition habits were very selective. For this reason, an action plan was prepared by the teacher and various educational studies and activities representing the importance of nutrition and its necessity for our health were implemented. The activities carried out for this purpose are summarized below;

- **Games**: Children's favourite activity is play, and play is the easiest way to reach all areas of development. For this reason, children's attention was drawn first when planning education. In the education given to children, activities were diversified in order to reinforce the information gained by repeating it.
- **Recognize by touch game**: Children were asked to find the mixed food items by touching, feeling and smelling them with closed eyes.
- **Know your taste game**: Children were asked to find sour, sweet and bitter flavours by tasting them with closed eyes.
- **Card matching game**: The children were asked to match the cards by combining the parts of the half and large shaped foods placed on the table.
- **Finger puppets**: Some of the food groups were taught with finger puppets, ring puppets, face masks and hand puppets.
- **Make your own pickle activity**: The necessary ingredients for pickles were brought. First, the taste of the pickles before they were pickled was examined. Then the ingredients were placed in everyone's jars, and pickle juice was prepared and tasted. Then the pickle juice was placed in the jars. The change in the taste of the pickled foods was tasted.
- **Art activities**: Colouring, tearing-pasting, paper folding activities were done to explain foods and their properties.
- **Musical tradition activities**: Some food types were included in the activities with musical tradition and body percussion.
- **Story** and **drama studies**: The fairy tales in Prof. Dr. Türkan Kutluay Merdol's (2018) book were used. Drama work was done with children about fairy tales.
- **Poems, Songs:** Songs and poems were added to the work done individually and as a group.
- **Movie and Video Screening**: Videos and movies about nutrients and nutrition habits were shown to children who met with technology early and were more intertwined with technology in order to help them learn by watching and concretize what they learned, and to ensure the permanence of awareness-raising activities on this subject. At the end of the activities, children were interviewed.

- **Experiments**: Experiments were conducted to explain the rules we should pay attention to when consuming food. Food spoilage was observed and it was emphasized that we should stay away from situations that threaten our health while learning the right nutrition habits.
- **Picnics**: When the weather was good, children were given the opportunity to choose their own food by having an open buffet breakfast in the school garden, and it was observed that there was a difference in the types of food they took on their plates before and after the training.
- **Collecting smiley faces - Rewarding:** A board with children's photographs was prepared. The children collected smiley faces in proportion to the food they ate at each food, and this symbolic game was effective in helping them taste the food and finish the food on their plates. At the end of the month-long activity, the smiley faces were counted, and all students who collected smiley faces received a certificate of achievement.
- **Peer coaching (Nutrition buddy)**: According to their nutritional status, well-fed and less well-fed students were paired and became feeding buddies. They were asked to be responsible not only for their own plate but also for their friend's plate and to support their friend to finish their plate.

4. Result and Findings

The first sub-problem of the study is "How do preschool children prefer to consume various foods at the beginning of the school year?". In line with this purpose, firstly, the fruits, vegetables and some foods offered to the students for nutrition purposes in the school were determined. For this purpose, each student was observed individually for 54 foods offered to students during one semester at the school, and it was determined which foods they ate or did not eat. The percentages and frequencies of the data obtained at the classification level at each food level were determined. This process was carried out at the beginning and end of the school year, and the changes were quantified and presented in Table 1.

Table 1: Frequency results of teacher observation results before and after the implementation of students' nutrition preferences

No		Beginning of the Semester		End of the Semester	
		No Preference (f)	Preferring (f)	No Preference (f)	Preferring (f)
1	Cheese	10	4	1	13
2	Cream cheese	11	3	2	12
3	Cheddar cheese	9	5	2	12
4	Butter	8	6	3	11
5	Olive	9	5	1	13
6	Tahini molasses	8	6	3	11

7	Halva	4	10	1	13
8	Jam	3	11	1	13
9	Honey	5	9	2	12
10	Omelette	6	8	1	13
11	Boiled egg	6	8	1	13
12	Turkish flatbread	5	9	1	13
13	Sandwich	5	9	1	13
14	Crepe	5	9	1	13
15	Canapé	4	10	1	13
16	Bagel	1	13	0	14
17	Turkish Pizza	3	11	1	13
18	Hamburger	2	12	1	13
19	Carrot	5	9	1	13
20	Lettuce	6	8	1	13
21	Parsley	14	0	1	13
22	Cucumber	2	12	1	13
23	Tomato	2	12	1	13
24	Potato	4	10	1	13
25	Broccoli	13	1	4	10
26	Spinach	11	3	0	14
27	Leek	14	0	1	13
28	Cabbage	10	4	6	8
29	Green beans	4	10	2	12
30	Cauliflower	12	2	5	9
31	Eggplant	12	2	6	8
32	Zucchini	10	4	4	10
33	Lentil soup	3	11	0	14
34	Highland soup	2	12	0	14
35	Vegetable soup	14	0	2	12
36	Tarhana soup	4	10	0	14
37	Ezogelin soup	3	11	0	14
38	Vermicelli soup	4	10	2	12
39	Pasta	1	13	0	14
40	Rice	1	13	0	14
41	Green lentils	13	1	2	12
42	Dried beans	3	11	0	14
43	Chickpea	3	11	0	14
44	Chicken	1	13	0	14
45	Meatball	0	14	0	14
46	Stuffed pepper	5	9	0	14
47	Kashkek	5	9	3	11
48	Ravioli	2	12	1	13
49	Salad	6	8	0	14
50	Tzatziki	5	9	2	12
51	Yogurt	3	11	1	13
52	Milk	3	11	1	13
53	Çay	1	13	0	14
54	Lemonade	1	13	1	13

Table 1 shows that the least preferred foods at the beginning of the academic year were parsley, leek, vegetable soup (f=0), green lentils, broccoli (f=1), eggplant, cauliflower (f=2), cream cheese, spinach (f=3), zucchini, cabbage, cheese (f=4) and cheddar cheese, olives (f=5). Relatively preferred foods are butter, tahini, molasses (f=6) omelette, boiled egg, lettuce, salad (f=8) honey, sandwich, Turkish flatbread, carrot, crepe, stuffed pepper, keshkek, tzatziki (f=9) and yoghurt, vermicelli soup, tarhana soup, green beans, potato, canapé and halva (f=10). Students' most preferred foods were jam, Turkish pizza, lentil soup, ezogelin soup, dried beans, chickpeas, yoghurt, milk (f=11), hamburger, cucumber, tomato, highland soup, ravioli (f=12), tea, lemonade, pasta, bagel and rice (f=13) and meatballs (f=14).

Again, as seen in Table 1, it was determined that there was an increase in consumption preferences in all 54 foods at the end of the education period. In 46 of the 54 foods, students' preferences were concentrated in the frequencies (f=12, f=13, and f=14) for each food. According to the teacher observation results at the end of the semester, the least preferred foods were cabbage and eggplant (f=8), cauliflower (f=9), and broccoli and zucchini (f=10). It is seen that vegetables are relatively less preferred foods.

The second sub-problem of the study was "Did the teacher's practices affect preschool children's preferences for consuming various foods at the end of the education period?". In this direction, the observations of the parents of the students regarding the consumption preference behaviours of 54 foods determined at the beginning and at the end of the semester were applied. Findings regarding the results of the observations are presented in Table 2.

Table 2: Frequency results of parents' observation results before and after the intervention regarding students' nutrition preferences

Students	Beginning of the Semester		End of the Semester	
	No Preference (f)	Preferring (f)	No Preference (f)	Preferring (f)
A.. M…	24	30	0	54
M….. T….	18	36	7	47
S….	27	27	3	51
E….	19	35	1	53
G…..	10	44	0	54
M….. E..	24	30	4	50
M….	15	39	1	53
Mu……	43	11	2	52
E…. K….	1	53	7	47
Ç…. Y….	34	20	9	45
K….	27	27	5	49
E… C….	4	50	0	54
Y….	19	35	2	52
Z…..	14	40	0	54

Table 2 presents the observation results of individual students' preferences for various foods offered by the school for nutrition during a semester at the beginning and end of the semester, based on family observation results. When the observation results are considered holistically, it is clearly seen that the activities and practices that the teacher implemented for the students positively influenced on the students' nutrition habits. When evaluated individually on the basis of students, it is seen that at the beginning of the academic year, the nutrition habits of S-AM, S-S, S-ME, S-Mu, S-ÇY and S-K students were relatively negative. Additionally, S-Mu was the student who preferred the specified foods the least. At the end of the academic year, however, S-CY was the student who preferred the specified foods the least. Based on the data obtained from the parents, it is possible to say that all students had a positive preference orientation in their nutrition habits at the end of the semester.

5. Discussion and Conclusion

In the study, the behaviours of preschool children regarding their consumption preferences for various foods were revealed, and then the effect of the activities carried out by the preschool teacher within the scope of the action research on the changes in students' preferences was revealed. When the results of the teacher's observations on the nutritional preferences of the students in her classroom at the beginning of the academic year were examined, the least preferred foods were parsley, leek, vegetable soup (f=0), green lentils, broccoli (f=1), eggplant, cauliflower (f=2), cream cheese, spinach (f=3), zucchini, cabbage, cheese (f=4) and cheddar cheese, olives (f=5). When the data are analysed, it is seen that the least preferred foods are mainly vegetables. The findings obtained are consistent with the findings in different studies (Özyürek, Begde & Özkan, 2013; Kutluay Merdol, 2012; Niclas, Morales, Linares, Yang, Baranowski, Moor & Berenson, 2004).

Özyürek, Begde, and Özkan (2013) found that families viewed their children's behaviour of choosing food as a negative. According to Kutluay Merdol (2012), preschool children do not eat every food with an appetite; their likes are limited, and they exhibit selective behaviours. At this stage, children are much more sensitive to sharp tastes and smells and do not like to consume vegetables such as cabbage, cauliflower, leek and celery. They are more selective about eating raw vegetables than cooked vegetables and foods. Niclas, Morales, Linares, Yang, Baranowski, Moor, and Berenson (2004) examined the eating behaviours of school children and found that almost half of the participants did not eat any vegetables, 20-30% did not eat fruit, and they skipped foods by consuming snacks very frequently (cited in Garipağaoğlu & Özgüneş, 2008).

Foods that students prefer more than vegetables are butter, tahini, molasses (f=6), omelette, boiled egg, lettuce, salad (f=8), pancake, sandwich, carrot, honey, stuffed pepper, keshkek, tzatziki (f=9) and yoghurt, vermicelli soup, tarhana soup, green beans, potato, canapé and halva (f=10). Students' most preferred foods were jam, Turkish Pizza, lentil soup, ezogelin soup, dried beans, chickpeas, yoghurt, milk (f=11), hamburger,

cucumber, tomato, highland soup, ravioli (f=12), tea, lemonade, pasta, bagel and rice (f=13) and meatballs (f=14). Koyuncu Şahin, Esen Çoban, and Güney Karaman (2018) conducted a study with 12 preschool teachers working in two independent state kindergartens in Ankara, and their findings show that children turn to ready-to-eat foods in this period. They stated products such as candy, chocolate, ready-made fruit juices, and chips as ready-made foods in their study. Tekgül, Özer, and Aksoy (1986) also observed that the majority of primary school students spent their pocket money to buy food such as candy, chocolate and toast. Mennella (2014) highlights in her research that children prefer higher levels of sweet and salty tastes and reject lower levels of bitter tastes. These results make them particularly vulnerable to our current dietary environment, which includes foods high in salt and refined sugar, rather than opting for the recommended low-sugar, low-sodium, vegetable-rich diets.

As seen in Table 1, it was determined that there was an increase in the consumption preferences of all of the 54 foods determined in the study at the end of the education period. In 46 of the 54 foods, students' preferences were concentrated in the frequencies (f=12, f=13, and f=14) for each food. According to the teacher observation results at the end of the semester, the least preferred foods were cabbage, eggplant (f=8), cauliflower (f=9), broccoli and zucchini (f=10). Notably, the relatively less preferred foods were vegetables, as before the implementation. The findings obtained are similar to Ağgül Yalçın, and Yalçın's (2018) study on children's food choices and Turan's (2016) study on children's preferences for less consumption of vegetables. Başkale (2010) conducted an experimental study with 238 kindergarten students and found positive improvements in the food consumption frequency of the children in the experimental group compared to the control group. The results after the training showed that there was an increase in the consumption of milk and dairy products, green leafy vegetables, root vegetables, white meat, fish and fruit, and a decrease in the consumption of sugar and ready-made fruit juice.

Table 2 presents the results of the observation results obtained from the parents and the results of the preference behaviours at the beginning and end of the semester at the individual student level for the various foods offered by the school for nutrition during a semester. When the observation results are considered holistically, it is clearly seen that the activities and practices put forward by the teacher for the students reflected positively on the nutritional preferences of the students. When evaluated on a student basis, it is seen that at the beginning of the academic year, the nutrition habits of S-AM, S-S, S-ME, S-Mu, S-ÇY and S-K students were relatively negative. At the beginning of the academic year, S-Mu was the student who preferred the specified foods the least. At the end of the academic year, S-CFY was the student who preferred the foods least. Based on the data obtained from the families, it is possible to say that all students had a positive orientation towards the 54 foods offered to them in their nutrition habits at the end of the semester. The results obtained from the research conducted in the preschool period are very valuable in the semester of serving the results of research emphasizing the acquisition of healthy nutrition habits, especially in the early period. In their study,

Demirezen, and Çoşansu (2005) stated that the children in the sample group had significant unhealthy nutrition habits and carried a significant risk in this respect. The fact that unhealthy nutrition habits increase with age reinforces the fact that preventive interventions to promote healthy nutrition habits in children and young people starting from an early period are valuable. In this context, Küçükkömürler (2017) suggests that school-age children should gain a traditional nutrition habit as a way to protect them from nutrition-related problems. In this context, it is thought that orientation towards traditional products with less fat, sugar and salt will contribute to our children's participation in life as healthier individuals. Karakaş, and Törnük (2016) emphasize similar views and argue that traditional foods, such as yoghurt, molasses, bulgur, and pickles, as well as less processed or unprocessed foods, can be consumed by school-age children and healthier and balanced nutrition behaviours can be gained against the consumption habits imposed by modern life.

It was deemed important to emphasize a view that emerged during the literature review conducted during the research process. This view is that family attitudes and nutrition habits, being in an educational environment and social interaction with peers are effective in the acquisition of nutrition habits in the early period. It is very important to support the development of healthy eating behaviours in children and to diagnose possible nutritional problems early. Because the nutrition habits that start in the first years of life will affect the health, growth and development of the child throughout his/her life (Akdoğan & Balcı, 2022). Children's eating attitudes are shaped by the environment. Individuals' food choices are closely related to age, gender, genetics, lifestyle, traditions, economic, cultural and environmental factors (SBHSK, 2022). Role models of adults and peers, especially encouragement through supportive attitudes, are seen as effective in changing attitudes at school (Dixey, Heindl, Loureiro, Pérez-Rodrigo, Snel, & Warnking, 1999). Children form attitudes about nutrition through their environment and experiences. Children's attitudes towards eating are often influenced by the environment. Children develop different attitudes to different situations depending on various factors such as the objects in their environment or their previous experiences. Acquired behaviours do not always remain the same, depending on the individual's new experiences or cognitive insights (Yi-Ping, Jui-Ching, & Mei-Ju, 2016). It is possible to state that the educational practices carried out by the teacher during the research process were efforts in line with the perspective of Dixey et al. (1999) and Yi-Ping et al. (2016).

According to the findings obtained during the research process, the educational activities and actions carried out by the teacher in line with the action plan contributed positively to their nutrition habits. During the research process, the teacher included activities and actions such as Let's Get to Know Them by touching, know the taste game, card matching game, finger games, make your own pickle activity, art activities, musical tradition activities, story and drama activities, poems, songs, movie and video screenings, experiments, picnics, smiley face collection-rewarding, peer coaching for preschool children. There are findings in the literature that similar activities are effective in gaining

various behaviors related to nutrition habits (Borzekowski & Robinson, 2001; Piziak, 2012; Uzşen, 2016; Ünver & Ünüsan, 2005; Juzwiak, 2013; Akdoğan & Balcı, 2022). According to the research results, Akdoğan and Balcı (2022) recommend that activities such as preparing food together with children be carried out in pre-school institutions. Braga-Pontes, Simões-Dias, Lages, Guarino, and Graça (2022) conducted an experimental study in 4 preschools in Portugal and determined the effect of vegetable consumption between groups. In the study, vegetables were presented to children in the experimental group for tactile, auditory and visual exploration in a way that supported sensory learning. Different strategies were used, such as repeated taste interactions, reward offer (label), and multiple vegetable offers simultaneously. The researchers reported that vegetable consumption increased in the short and medium term.

Borzekowski and Robinson (2001) conducted an experimental study on preschool children in which the children in the experimental group were shown a popular cartoon with food advertisements implicitly embedded in it, and the control group was shown a cartoon without advertisements. As a result of the study, it was observed that children who were exposed to advertisements even for a very short time preferred the food products in the advertisements more. In a study conducted by Piziak (2012) with 413 children, parents of children who participated in a game program with vegetable cards for a year were asked questions about their children's vegetable consumption before and after the program. After the program, it was found that their children's vegetable consumption increased on weekdays and weekends. Nekitsing, Blundell-Birtill, Cockroft, Fildes, and Hetherington (2019) read sensory play-compatible (celery) and incompatible (carrot) storybooks to 337 children aged 2-5 for 2 weeks. In the study, reading books compatible with sensory play increased celery consumption in children. Uzşen (2016) examined the effect of the game on the acquisition of nutrition habits of school-age children. It was found that the game contributed to an increase in the consumption of fresh vegetables and vegetable dishes, although there was no change in fresh fruit and fruit juice consumption. However, it did not turn into behaviour. Similarly, although egg consumption increased in children after the training, it did not turn into behaviour. However, consumption of milk and dairy products increased and turned into behaviour. There was no significant change in meat and white meat consumption, but consumption of seafood and legumes increased after the training. Ünver, and Ünüsan (2005) provided nutrition education to children aged five to six years. In the nutrition education program, children were informed about the benefits of food groups for our health, the nutrients in each group and the extent to which we should consume these nutrients. In the content of the program, art activities, games, poems, rhymes, stories, movies and materials were used. As a result of the research, the level of knowledge about food groups increased in favour of the experimental group, and the preference for eating three servings of vegetable products daily before and after the education in the experimental and control groups was realized in favour of the experimental group. According to the results of the experimental research, the positive

effects of methods, activities and practices suitable for the developmental characteristics of early children were revealed.

In consistency with the research emphasized in the literature and the results obtained from the study, it is extremely important to gain the desired behaviours related to nutrition in the early period, which impacts all kinds of developmental areas of the child and is expressed as a critical period. Teachers should be aware of the development of these behaviours in the preschool education process, especially in food preferences.

6. Recommendations

Recommendations for future research and applications based on the research results are as follows:

When teachers consciously act in line with an action plan to develop these behaviours, they can contribute positively to students' nutritional preference behaviours. For this reason, it can be suggested that teacher candidates should be informed about nutrition education, especially in the teacher training process, and activities that can be done to gain desirable nutritional behaviours in children in the early period should be included as part of teacher training programs.

In the context of this research, different studies can reveal the long-term effects of the nutritional habits and preferences acquired by children. In addition, the food offered in the school menu can be presented in more detail according to the other food groups (protein, fat, carbohydrate, vitamin, and mineral contents) in children's preferences. Many activities were carried out in this action research. Different studies can be planned to determine which are more effective in determining food preferences.

Ethical Statement

During the planning, data collection, analysis and reporting of this research, the ethical principles and rules were followed. All responsibility belongs to the authors. The authors declare that there is no conflict of interest with any institution or person within the scope of the study. This research was conducted within the scope of a scientific research project (SEB-BAP 17-0147) supported by Amasya University.

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Conflict of Interest Statement

The authors contributed equally to the study. The authors declare no conflicts of interest.

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