Review

Functional Foods' Consumption in Children and Parents: A Literature Review

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Functional Foods' Consumption in Children and Parents: A Literature Review

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Abstract: Among young children, parents are a main factor of children's preferences for food served as they are responsible for purchasing and providing Functional Foods (FFs) and they are role models for them. This revies study conducted according PRISMA guidelines and aimed to review the recent data about the consumption of FC into families as part of a balanced diet. The literature search was conducted via online academic search engines PubMed, ResearchGate and Google Scholar. The search process was restricted to research papers published in English in reviewed journals from 2012 to 2023. Thirty six articles were ultimately included in the present review. The results showed that there is a correlation between several socio-demographic and a higher probability of buying FFs for children. There is a positive effect on purchasing frequencies of gender (female), higher household annual income and education level, together with higher levels of nutritional knowledge and trust in positive scientific evidence regarding FFs. Also, parents' socio-demographic factors affect the children's F/V consumption. The summary of evidence concludes on the point that parents are the role models about their children's eating behavior and eating habits.

Keywords: functional foods; parents; children; families; consumption; fruits; vegetables

1. Introduction

The relationship between diet and health has been recognized since ancient times. Food and nutrition research has focused on the role of certain foods and dietary patterns to reduce the risk of degenerative and chronic diseases. In addition, nutrition scientists began to investigate optimal nutrition that is nutrition that not only provides sufficient nutrients to sustain growth and reproduction, but also promotes health and longevity and reduces the risk of various diseases [1,2].

In recent years, the Functional Foods (FFs) consumption has played a key role in healthy habits, due to the growing concern of consumers about health and the perception that diet directly affects our health [3]. Functional foods are often referred as 'natural health products' or 'healthy foods' [4]. Worldwide there are numerous definitions of "functional food products", but there is not a unique/ official accepted terminology about them, so far [5].

There is a plethora of factors that seem to affect an individual's knowledge of FFs and the most important are education and health motivation. Consumers with high level of education and health motivation are more likely to be aware of FFs, whereas the opposite happens when someone has low educational and health status and tends to be less aware of FFs. Increased awareness and knowledge about the benefits of the FFs lead to FFs purchases [6–8].

Several studies show that there are gender differences, and these differences appear to be attributable to dietary choices made by women as they are more involved in weight control and place more value on healthy eating than men do [1,3,9–11]. Among other factors, they tend to be more receptive to new foods and more concerned about food safety than men. Most studies reveal that women (60%) have more knowledge about FF than men and therefore, a greater intention to use them. Research by Siro and colleagues concluded that women are the main consumers of FFs in both Europe and the USA [3]. In most families, women still have primary responsibility for feeding children [12].

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Parents are important agents in promoting their children's health, behavior and education and play a key role in structuring their children's first experience with food and eating through their own beliefs, practices, perspectives, attitudes, knowledge and understanding of the health benefits of food and its nutrients. In particular, parental knowledge and dietary behaviors have been described as important factors in children's knowledge of healthy foods. But food knowledge alone may not be enough and the implementation of parental behavior programs may be more effective than conventional nutrition education programs in order to improve the quality of children's diets [1,13]. Among young children, parents are a key determinant of children's preferences for food served as they are responsible for purchasing and providing food and they are role models for their children from whom eating behaviors are adopted [14]. Some parental dietary practices are more likely to promote healthy eating patterns in children, while others are more likely to lead to unhealthy or unbalanced diets [15]. The child's family environment was shown to be the biggest contributor to the development of their eating habits compared to genetic predisposition [16].

Several studies have found a positive effect between gender, higher annual household income and education level, along with higher levels of nutritional knowledge and trust in positive scientific evidence about FFs. Thus, parents' education, skills and income were the most important factors [1,17,18]. Internationally, there are a small number of studies dealing with the investigation of parents' and children's knowledge and consumption of FFs. Although, there are several studies about eating habits on children, there is not enough scientific data focusing on the consumption of FFs by children and their parents.

The aim of the present study is to systematically review the FF consumption and preferences in children and parents.

2. Materials and Methods

The literature search was conducted, according to PRISMA guidelines, via online academic search engines PubMed, ResearchGate and Google Scholar. The keywords that used in our search were “functional food” AND “family” OR “functional food” AND “parents” OR “functional food” AND “children” OR “Fruit and Vegetables consumption” AND “children” OR “Fruit and Vegetables consumption” AND “family” OR “Fruit and Vegetables consumption” AND “parents”. The selection process for the articles is shown in Figure 1. In total, 270 articles were selected by reading the title and the abstract. The search process was restricted to research papers published in English in reviewed journals from 2012 to 2023. Review articles, systematic reviews, articles in other language except English, articles with year of publication before 2012, articles that are not included FF or F/V and sample of parents and/ or children were excluded (n = 234). Thirty six articles were ultimately included in the present review. Part of the excluded articles was used for the Introduction and Discussion of the present review. The existence of a few studies about the Functional Foods’ consumption in families, leaded us to select a very small number of researches. However, the articles published about F/V and children/ parents were many more.

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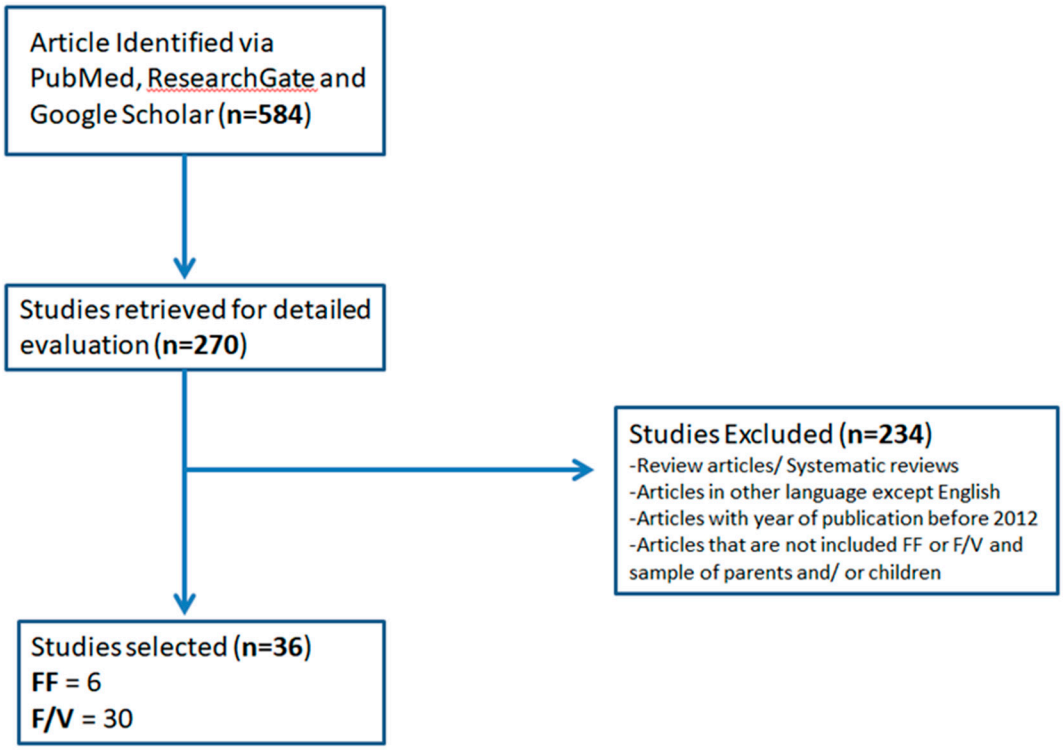

Figure 1. Flow chart outlining article selection process for the present review.

3. Results

3.1. Studies with Children/ Parents and FFs consumption

A total of 6 studies described families' FFs consumption which published between 2012 and 2023 (**Table 1**). One study was conducted in Greece, two in Mississippi (U.S.A), one in Australia, one in Italy and the most recent in Malaysia. All of the studies targeted in parents and knowledge/ preference/ awareness and consumption of the Functional Foods.

Krystallis and Chrisochou in 2012 with an experimental study showed that parents perceived functionality as a product attribute that contributes positively to the image enhancement of the (unhealthy) target product and affirmed that they are willing to pay reasonable premiums for it. Also, it showed that the level of consumers' prior awareness of functionality played a decisive role in their preference for functional products. The type of food that ''carries'' functionality was more important when consumers had no knowledge of functionality. Parents' awareness of FFs was found to increase the strength of preference per functionality type and the price premiums willingly paid [19].

Rahmawaty's et al. in a cross sectional research aimed to identify factors that influence the consumption of fish and foods that are enriched with omega-3 long-chain polyunsaturated fatty acids (n-3 LCPUFA). Foods that are enriched with n-3 belong to the category of FFs. Researchers found that despite a high level of awareness regarding the health benefits of fish identified in the present study only a fifth of participants reported eating fish and/or seafood at least twice per week, which is the recommendation for cardiovascular health. Intake of commercially available foods enriched with n-3 was similarly low. Price was identified as the most predominant barrier to consuming foods enriched with n-3, but not for canned fish [20].

Deleon et al. in 2015 via descriptive study found that parents with family income of $100,000 or higher fed their children more FFs than parents with near or slightly below median income ($35,000-$50,000 and $50,000-$75,000) [21]. In the same year (2015) Annunziata et al. showed similar results with previous researchers, and especially recorded that parents have a strong interest in functional

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nutrition for their children, even if their level of familiarity with these products is still low. They revealed that there is correlation between several socio-demographic and a higher probability of purchasing FFs for children. Furthermore they found a positive effect on purchasing frequencies of gender (female), higher household annual income and education level, together with higher levels of nutritional knowledge and trust in positive scientific evidence regarding FFs [1].

Weiss in 2016 in a quantitative analytical cross-sectional study showed that parental consumption of functional foods correlated with feeding all functional foods from the six health benefit categories (heart health, weight health, cancer, digestion health, bone health and other health) to their children. The only health benefit category in which parental awareness was correlated to child feeding was bone health. Regarding relationships between consumption and feeding their children specific health benefit categories, heart health, other health and cancer prevention had the highest positive correlations [6].

A Qualitative Study of Malaysian Parents' Purchase Intention of Functional Weaning Foods, showed that the perception of a health benefit played the key role in the shoppers' attitudes toward functional foods. These parents seem to have knowledge of the perceived health benefit of functional weaning foods that encouraged them to purchase them for their baby. Half of the parents intended to purchase as they believed that functional weaning foods were good for their babies regardless of if they needed it or not. Parents are becoming aware of healthy living and would look for products that appear to offer health benefits for their babies. Some of the parents stated that they usually purchase products that promote brain development or digestive balance as this will help in the development and growth of their babies [22].

Table 1. Description of the studies with families' FF consumption.

Sources	Year	Country	Method	Sample size	Main Findings
Krystallis	2012	Athens, Greece	Experimental study	parents of 5- to 14-year-old child	The more parents were aware of functional foods, the more they preferred them. The type of food labeled as a functional food played a role in purchasing it when consumers were unaware of its functionality
Rahmawaty	2013	Wollongong, New South Wales, Australia	Cross-sectional study	262 parents who have a child aged 9–13 years	Among families who consume fish, taste was the most important factor to choose it, as well as preferences of individual family members, but not for those who don't eat fishes. Price was the major barrier to consumption of fresh fish, but not for canned fish and n–3-enriched foods, in either those who consume or not these foods.
Deleon	2015	Mississippi, U.S.A.	Descriptive study	parents	'Significant relationships in parental age, household income, education, marital status, BMI, gender, self-reported overall health and age of children in the household to including functional foods in their children's diet'. Parental race/ethnicity had the most significant relationship.
Annunziata	2015	Campania, Italy	Web survey	365 parents of children aged between 1 and 10 years	Although parents didn't know enough about functional foods, they had a strong interest in the functional nutrition of their children. The frequency of buying functional foods targeting in children depends not only on parents' socio-demographics but also on

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				their nutritional knowledge, confidence and familiarity with FFs.
Weiss	2016 Mississippi, U.S.A.	Quantitative analytical cross-sectional study	202 parents	The consumption of functional foods by parents has a greater effect on the consumption of functional foods by children than the awareness of functional foods.
Mohamad	2018 Malaysia	Qualitative Study	parents	Parents appeared confident in their capacity to incorporate functional weaning foods into their children's diets. Parents recognize the health benefit of consuming functional weaning foods and that encouraged them to purchase them for their baby.

3.2. Studies with Children/ Parents and Fruit/Vegetables consumption

Due to the fact that Fruit and Vegetables (F&V or F/V) belong to the natural FFs, we decided to include in our review also surveys with children and parents who consume them.

A total of 30 studies were selected that described children's and parents' F/V consumption which published between 2013 and 2023 (**Table 2**). Three studies were conducted in Greece, six in U.S.A, two in Canada, one in Italy, one in Australia, seven at the same time in different European countries, one in Thailand, one in Finland, two in Poland, one in Mexico, one in Nepal, two in The Netherlands and two in Portugal. The most of the studies targeted in parents and how their F/V consumption associated with their kids F/V consumption. Some of the studies focused on how parents' income, education and ethnicity affect their children's F&V consumption. While some other researches have checked the children's frequency of F&V intake.

Findings showed that the majority of children and parents were not meeting the recommendation for fruit and vegetable consumption [23–31]. On the other hand, in Eliason's and Charneca's studies were appeared most of children, especially the younger age groups, met WHO guidelines for daily amount of fruit. However, the same was not found for vegetable consumption [32,33].

In addition, parents who had positive health status indicators, for example had Higher Healthy Eating Index or met daily F&V recommendations, were more likely to have children who also had the same positive health status indicators [25,34–41]. Furthermore, parents with positive health status indicators can teach their children better cooking and food skills. Food skills are the skills are needed for how to read labels, plan meals, select nutritious foods and prepare healthy meals. The above is confirmed by LeBlanc's research which found that adolescents who had better cooking and food skills had also healthier eating habits and consume more F&V [42].

Last but not least, our findings imply that socio-economic status (education, work experience and income) of parents is consistently associated with the nutritional status and F/V consumption of children. Children with higher educated parents were more likely to consume F&V daily than their peers with low educated parents. Also, children of high family income had higher odds to consume more F&V [37,43–50]. Nevertheless, in Attorp's and de Jong's researche there are nothing similar to the above-mentioned studies, as they found that parents' income and education were not significantly associated with children F&V consumption [51,52].

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Table 2. Description of the studies with families' F&V consumption.

Sources	Year	Country	Method	Sample size	Main Findings
Lazzeri	2013	Italy	Cross-sectional study	3291 students (11-, 13- and 15-year-old)	- A low frequency of F&V consumption was associated with irregular breakfast consumption. - Significant association between irregular snack intake and low frequency of fruit consumption, but not for vegetables intake.
Lynch	2013	10 countries: Bulgaria, Finland, Germany, Greece, Iceland, Norway, Portugal, Slovenia, Sweden and the Netherlands	Cross-sectional survey	8158 children	- On average 53,3% of the children mentioned not to eat fruit daily and 44,9 % mentioned eating vegetables less than once daily. - Children do not reach the WHO recommendation for F&V intake, with only 23,5% of the whole sample meet the recommendations.
Attorp	2014	British Columbia, Canada	Cross-sectional study	773 fifth-and sixth-grade school children and their parents	- Parent's education and income were not significantly associated with child F&V intake. - Parental race/ethnicity had the most significant relationship.
de Jong	2014	Zwolle, the Netherlands	Cross-sectional study	4072 children aged 4-13 years	-Children who don't eat vegetables every day are associated with overweighting and a medium SES background.
Draxten	2014	Mineapolis, U.S.A.	Randomized controlled trial	160 Parent-child dyads	- Parental role modeling of F&V intake was associated with children who consume every day four servings of F&V. - Children have similar perceptions with their parents' role modeling behavior of fruit and green salads at dinner.
Lehto [53]	2014	Ten European countries: Bulgaria, Finland, Germany, Greece, Iceland, the Netherlands, Norway, Portugal, Slovenia, Sweden	Cross-sectional study	8159 eleven-year-old children and their parents	-In five of the ten countries, children with higher educated parents were more likely to mention that they eat fruits every day.
Wolnicka	2014	Poland	Cross-sectional study	1255 children (aged 9 years) and their parents.	-The children's consumption of F&V was affected by the F&V consumption of their parents. -Parental education affected only the frequency of fruit intake. - Were correlated parents' knowledge of the recommended consumption and the frequency of F&V intake by children.

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Jackson	2015	Corvallis, U.S.A.	Cross-sectional study	102 children and their parents	-Family – home Nutrition environment (FN) and children's dietary had positive association between more frequent intakes of F&V at meals or snacks and greater F&V consumption among children.
Mantziki	2015	EPHE project: 7 European countries (Belgium, France, Greece, Portugal, Romania, The Netherlands, Bulgaria)	Follow up study	1266 children and their families	- Children with mothers of high educational level consumed more F&V than their peers of low socio-economic status. - Parents seem to have knowledge of the perceived health benefit of functional weaning foods that encouraged them to purchase them for their baby.
Schoeppe	2015	Australia	Cross-sectional study	173 parent–child dyads	-Maternal but not paternal support for F&V was positively associated with children's F&V behavior.
Yannakoulia	2016	Greece	Observational study	25309 children (3–12 years old) and adolescents (13–18 years old)	-The higher the Family Affluence Scale (FAS score), the greater the percentage of children and adolescents who consume F&V every day.
Hong	2017	Nakhon Pathom, Thailand	Cross-sectional study	609 students (grade 4-6)	-Higher maternal education level be significantly associated with total F&V intake.
Coto	2019	Florida, U.S.A.	Pilot study	86 parent - child	- The majority of parents (54%) didn't reach the recommendations for F&V and were classified as unhealthy role models. -Parents considered healthy role models were more likely to have a child with higher F&V intake.
Groele	2019	Poland	Observational study	1200 Polish mothers of children aged 3–10 years	-Children of mothers who had a lower level of education more often than others consumed fruits alone as a dish. -Children of mothers who had a higher level of education had a higher consumption of vegetables than others. -Children of mothers with low income had a lower consumption of vegetables than others.
Quezada-Sánchez	2019	Mexico	Observational study	1041 children	-A higher maternal educational level was associated with a higher probability of intake of foods with a high micronutrient density such as F&V. -Children of mothers with paid employment have a lower probability of consuming vegetables.
Benetou	2020	Greece	Cross-sectional study	3525 adolescents	-More than 60% of the adolescents didn't meet the reccomantation of of F&V daily consumption.
Eliason	2020	Phoenix, U.S.A.	Cross-sectional study	2229 households	- Most children, especially in the younger age groups, reach the recommendation for daily amount of fruit.

					-The majority of children in all age/sex categories fell short of the recommendations for vegetables.
Etayo	2020	Six European centres (Belgium, Bulgaria, Germany, Greece, Poland and Spain)	Cross-sectional study	6633 preschool children	-Parental role has moderate influence with raise in fruit consumption to 19,3% of fruits consumption in European pre-schoolers and the 17,8% of vegetables consumption in boys and 21,9% of vegetable consumption in girls.
Malisova	2021	Greece	Cross-sectional study	609 School Lunch recipients and 736 control subjects	-School Lunch recipients reported higher fruit consumption.
Papamichael	2021	6 European countries: Bulgaria, Hungary, Belgium, Finland, Greece, Spain	Cross-sectional study	parent-dyads (fathers, n = 10,038) and school children (n = 12,041)	-There were positive associations between fathers' F&V consumption and frequency of children's consumption. -60% of fathers and less than 50% of children intaked F&V 1–2 times/ day, which does not reach the current WHO recommendations.
Pereira	2021	Portugal	Cross-sectional study	678 children from the fifth and sixth grades	-The amount of F&V intake is below the "five pieces per day" recommendation.
Barrantes	2022	Six countries: Bulgaria, Hungary, Belgium, Finland, Greece, Spain	Cross-sectional analysis	6705 parent–child dyads	-Parental education was associated with children's higher intake of F&V.
Boelens	2022	The Netherlands	Cross-sectional study	5010 parents of 4- to 12-year-olds	-Low/ intermediate educated parents are associated with a higher risk of a low vegetable intake. -Low/intermediate parental education is associated with low F&V intake in children.
LeBlanc	2022	Canada	Cross-sectional study	1054 students (467 boys and 570 girls)	-Adolescents who had better cooking and food skills mentioned having healthier eating habits and consuming more F&V. -Food and cooking skills were associated with healthier eating behaviors and greater F&V consumption among both boys and girls.
Linde	2022	Mineapolis, U.S.A.	Randomized controlled trial	114 children (7-10 years old) and their parents	-Higher Healthy Eating Index- total scores were associated with children's observations of their parent usually consuming fruit.
Charneca	2023	Portugal	Cohort study	89 parents/ caregivers of one 2- to 6-year-old child	-Fruit consumption was higher than vegetable consumption.
Hamner	2023	U.S.A.	Cross-sectional study	18386 children (1-5 years)	-In 20 states of U.S.A. more than one half of children didn't eat a vegetable every day.

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					-Nearly one third (32,1%) of children aged 1–5 years didn't eat fruit daily and nearly one half (49,1%) didn't eat vegetable every day.
Serasinghe	2023	Finland	Cross-sectional study	574 children and their parents	-There is positive association between higher parental education level and children's F&V intake.
Shrestha	2023	Pokhara, Nepal	Cross-sectional study	352 children	-None of the children met the WHO recommendation of ≥ five servings of F&V daily. -Children whose parent's education level was bachelor's and above and have a family income of more than NRs 40,000 significantly consumed adequate F&V.
Siopis	2023	Six European countries: Belgium, Bulgaria, Finland, Greece, Hungary, Spain	Cross-Sectional Analysis	9576 children–parents pairs	-When parents had higher education, families consumed more portions of F&V. -When mothers were fully or partially employed, families consumed more portions of F&V.

4. Discussion

The most recent years it has been observed an ever increasing number of functional products that target specifically younger consumers; they are easily accessible in market places and provide health benefits on children and at the same time the possibility of decreasing the risk of diseases. Furthermore, the food and beverage market that targets specifically children is growing at a fast pace. In 2014 it was observed that healthy food and drinks for children were included in the top 10 FF trends. It is widely accepted that children themselves play a significant role in decision making about food purchase. On the other hand, parents prefer nutritious food for meals and snacks' selection that can actually be beneficial and rich in nutrients for their child's diet but simultaneously can satisfy their child's hunger. Functional foods may also include improved choices over traditional ones and in this way they can support parents' choices as well as children's health. In any way though, they cannot replace healthy eating. Simultaneously, recent studies show increase in parents' interest and efforts to add more amounts of dietary fiber, probiotics/prebiotics and fish oil/omega-3 in their preteen children's diet [1]. Due to a study conduvted by Rahmawaty et al. in 2013, there is a positive association between young children's parents that believe that foods can be beneficial for health and additionally that foods rich in omega-3 fatty acids are beneficial for their children's health. It was also noticed that the family members of the parents who were conscious about the health benefits, have a tendency to consume more fish products [20]. Having this in mind, parents who were aware of calcium's health benefits, tend to use more calcium rich foods, as an effort to better and strengthen their children's health [54].

Supporting research correlate parents' healthy eating habits with their child's food intake. There is a positive association between parents who serve F/V at home and their child's intake of F/V. Additionally in an environment that vegetables are served, about 90% of the children consume vegetables, while in families that vegetables are absent from the table only the 50% of the children consume vegetables. Additional research has shown the positive association between children's fruit consumption and their mothers' nutrition awareness. Research indicates that parents who are more aware and concerned about nutrition issues, tend to be clearly more interested in getting nutritional information and consequently to have a higher level of knowledge, in comparison with parents who do not care about nutrition subjects [6].

The higher level of education seems to be connected with the parents' consciousness on health matters and their healthier dietary patterns, in comparison with those with less education. This is

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probably due to the knowledge of correlation between health, healthy diet, wellbeing and chronic diseases. In addition, parents that have graduated college have an increased Health Eating Index (HEI) score in matter of consumption fruit, vegetables and whole grain products, in comparison with parents with lower education levels. Several studies note a positive association between high fruit and vegetable intake by children and their parents' high education. Furthermore, children whose parents have attended at least four years of college seem to consume diets higher in potassium, vitamin C, calcium and lower in trans, saturated, and monounsaturated fats [21]. Birbilis and his colleagues discovered an inverse correlation between high levels of child BMI and obesity and parental education levels. Higher levels of education have been inversely related to child's consumption of energy-dense foods. On the other hand, there have been positive relations in fruit, vegetable and whole grain consumption. Furthermore, higher levels of education reflected higher socioeconomic status that has been associated with healthier eating habits and physical activity and consequently weight-control among families [55].

In Deleon's study we can observe the positive influence of parents' education levels on their children's bone health when they consume functional foods. Adolescents coming from families with lower school education were 67% more possible to have a lower quality diet, in comparison with those with higher education. Also, multiple studies support that better quality diets are noticed in children with higher educated parents [21].

In another Deleon's descriptive study, significant relationships were observed in parental age, gender, education, marital status, household income, BMI, self-reported overall health and age of children in the household and the inclusion of functional foods in their children's diet; however, parental race/ethnicity seemed to have the most significant relationship [51,55]. Parents who identified themselves as the race/ethnicity category "other" were noticed to be more likely to feed their children functional foods as a whole, as well as to feed their children functional foods for cancer, weight and "other" health subjects and health benefits, in comparison with parents who were white or black [56].

A parent's awareness about the health benefits of individual food components may be affected by multiple possible factors. Weiss in his study found that the higher awareness of parents on functional foods related to bone health might be the result of the importance placed on children's healthy growth by pediatricians, government health agencies and food manufacturers and due to the broad understanding and acceptance of the significant role bone health plays in children's growth. Parents were found to have high awareness about the direct relation of calcium-rich foods and vitamin D with bone health. The main conclusion of this study was that parents who consume FFs themselves are more likely to feed their children with FF, in comparison with parents who are just aware of the functional foods' benefits [6].

The criteria influencing the decisions to purchase FFs were differentiated by the factors of gender, age and education. Observing the research analysis we notice that mainly older persons, women and consumers with a university education understand the great importance and connection of the naturalness of the product and food safety. In the field of functional components appear clear differences between the two genders. An important determinant in food choices for women was the content of functional components. Age, gender and education essentially differentiate people's preferences for the base product (carrier) [9]. In a similar view, Campbell et al. noticed correlation between maternal knowledge of healthy foods and the children's feeding with those foods. In addition, an inverse relationship was found between maternal knowledge and children's feeding with salty snacks and soft drinks [57].

Furthermore, recent research mentions that female consumers are more probable to use FFs, as a result of their increased interest in health issues compared to men. Education has also been identified as a major factor in determining consumer attitudes towards FFs. Another socio-demographic changeable of great importance that affects attitudes towards FFs are households with young children. A few studies have shown that parents with children under the age of twelve have a tendency to buy these foods because as they say they are "for their child or children" [1]. In addition, Rex and colleagues referred that home's food environment (HFE) may influence dietary intake in

parents and their children. The HFE includes physical and social environment. The physical HFE is defined as the availability and accessibility of foods. The social HFE is combined by role modeling, feeding/ parenting styles, policies and family meals. Both are associated with maternal and child dietary intake [58].

Vegetable and fruit intake and generally dietary habits and food behavior are usually learned during childhood and will probably continue into adulthood. Childhood is a crucial time in order to influence these behaviors. Home environment is of special significance for a child; parents are in control of the accessibility and availability of foods (physical environment) and at the same time they are in charge to create social norms, offer social support and of course act as role models on healthy eating during their family meals (social environment) [59].

The findings of the present literature review highlight and emphasize the importance of the presence of improving programs and policies that will support FFs consumption in families and the significance of a comprehensive nutrition education that targets parents and schools. It is of utmost importance to develop such a program that promotes marketed functional foods and at the same time educates families on healthy eating, as family is the key influence on shaping healthy or unhealthy behaviors in children. Future intervention programs should involve children in the cooking process, gardening, and that may encourage a greater consumption of FFs. Running a vegetable farm for educational purposes could possibly improve children's attitudes towards F/V and increase their consumption. An important aid for low-income families would be to provide free nutrition educational programs, supplemental foods, including fruit and vegetables, and traditional natural FFs and to send nutrition educational messages trying to support positive parental role-modeling behaviors.

5. Conclusions

The summary of evidence from this review study concludes on the point that parents are the role models about their children's eating behavior and eating habits. They play the main role to what their children learn about food intake and influences their future lives and health. Finally, it is necessary to have a deeper understanding of the factors that affect parents' willingness to buy and consume FFs, especially for those FFs aimed for their children. This could lead to the design of new nutritional education programs with aim to increase FFs in families and promote human health, and well-being.

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Conflicts of Interest: The authors declare no conflict of interest.

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