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The Relationship between Nutritional Intake and Mother's Education Level with the Nutritional Status of Children with Special Needs

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Abstract

Children between the ages of 7 and 15 are considered to be of school age, and this is also an age period in which there is often a significant increase in children's growth and development. But tragically, some kids don't grow and develop normally, and they are the ones that are labelled as "special needs." This child has serious metabolic problems, which may affect their ability to absorb nutrients. The study's overarching goal is to learn more about the links between maternal diet, nutritional knowledge, and children's health and development. This study fits the criteria for what is known as a cross-sectional study. A total of 32 participants participated in this study's sample. This research used a food-record questionnaire, a mother-nutrition knowledge exam, and a respondent-characteristic questionnaire. The findings showed that there was no significant relationship between children's food intake and mothers' nutritional knowledge with the nutritional status of students aged 7-15 years. The results of Spearman's Rank correlation test indicate that there is no relationship between dietary intake and health. Spearman's Rank correlation analysis yielded the same result, indicating that maternal nutritional literacy did not correlate with child growth and development.

Keywords: Food Intake, Mother's Education, Nutritional Status

1. Introduction

Children are both fragile and precious stages in the life cycle because they set the path that the next cycle will take in terms of development. Because of this, children are both vulnerable and a golden period in the life cycle. Children today confront a myriad of health issues, such as being overweight and undernourished, to name just two of them. The stage that encompasses children who are of an age to attend school gets a lot of attention and is thus one of the phases that is highlighted. Children are of school age if they are between the ages of 7 and 15 years old, as defined by the World Health Organization.

Students who have special needs might be limited in one or more of the following ways: physically, cerebrally, neuromuscular, sensory-wise, or communication-wise. They could also have a combination of these factors. Because of this, it should not come as a surprise to hear that the age range of children who have special needs tends to be either sooner or later than what is often observed in schools. This is because these children tend to be born earlier or later than typical children.

The researchers have made some preliminary findings, and those observations suggest that schools pay particular attention to the issue of preserving the health of their students by conducting inspections of the school supplies that are given to the students by their parents. The researchers have been looking into this issue for quite some time now. During the inspection, it was often found out that parents had donated food supplies, which influenced the health of the students who had special needs. Teachers are often placed in the situation of having no option but to remove from the possession of autistic students' items such as cakes and quick snacks that include gluten and sugar. This is because consuming such foods has the potential to bring about outbursts of inappropriate behaviour.

Children who have abnormal circumstances and so need special education are at a greater risk of developing health problems; as a result, this should be a cause for concern because of the increased risk. They have an impaired immune system in contrast to other children their age, which makes it more probable that any given event will have a detrimental influence on their health. According to Dallacker et al (2018), the state of children's nutrition is one of the factors that may be considered when making conclusions about children's general health. It is a well-known and well-established truth that the degree to which a person's nutritional state improves is directly proportional to the degree to which their general health will improve. One of the factors that influence a person's nutritional status is the quantity of food that they consume daily.

The consumption of the appropriate foods needs to be increased in a timely and appropriate manner for children with special needs to have healthy lives and be able to participate actively in the social environment (Sogari et al., 2018). This is necessary for these children to have a chance at having a normal life. Depending on the person, eating meals that include an excessive amount of nutrients or an inadequate amount of nutrients compared to what is necessary may lead to either overnutrition or undernutrition. It is possible to obtain a nutritional status that is healthy by supplying the body with enough nutrients that are used efficiently. Soni & Singh (2018) stated Overnutrition is a condition that may occur when the body is given an excessive amount of nutrients, which can lead to a variety of negative health effects. On the other side, a condition known as malnutrition may develop if the body is not given enough amount of the essential nutrients it needs.

The nutritional status of a student may be affected not only by internal factors such as the quantity of food that they consume but also by external factors, most notably the nutritional knowledge of the mother, who is the primary player in the process of providing food for her children. This is because mothers are the primary individuals responsible for providing food for their children. Parents must take an active role in the process to improve the health of their offspring. This position may work properly if parents have access to appropriate information. According to Lau & Lee (2021) understanding the constraints that children are forced to operate under will be facilitated by benefitting from the viewpoint of the mother.

It has been shown that the nutritional status of children who have special needs is highly connected with the quality of parental comprehension as well as the eating routines of these children. This correlation holds even when controlling for other factors. There is a correlation between the quantity of protein and vitamins that are taken daily and one's overall nutritional status. There is now very little information accessible on inclusive schools that accommodate the needs of students who have specific health and nutritional requirements. The little information that is currently available comes from the results of scientific research. This is a precarious circumstance. The great majority of the research that has been carried out by the government is a survey of children in general, and there has not been a specific focus made on students who have special needs at any point in the process.

2. Methods

This kind of research refers to the sort of investigation that takes the form of a quantitative study that employs a cross-sectional methodology. The instruments that were employed in this study were a respondent characteristic questionnaire, a food record questionnaire, and a mother's nutrition knowledge test. All three of these questionnaires were administered to mothers. Data on the characteristics of the respondents included the types of challenges, age, gender, mother's educational level, parents' economic level, height and weight of the pupils, and children's overall height and weight. Also included were the respondents' overall height and weight. On the nutrition knowledge test for mothers, there are a total of twenty questions covering topics such as the idea of healthy food, the factors that affect the nutritional needs of school-aged children, the nutritional needs of school-aged children, the concept of the four pillars of balanced nutrition, the message of balanced nutrition for school-aged children, the role that nutrients play in the body of the child, health issues that are prevalent in school-aged children, and food processing. Keeping food records allows for the collection of data on the quantity of food taken in the form of the four macronutrients: calories, protein, fat, and carbohydrates.

To determine the frequency and percentage split of the data based on the categories that were defined at the beginning of the process, a univariate analysis was done on each variable. This allowed for the information to be compiled into a table. To study the nature of the connection that exists between each independent variable and the

dependent variable, a multivariate application of the Spearman Rank correlation test was carried out. This allowed for the examination of the relationship between all of the variables.

3. Results and Discussion

3.1. Mother's Knowledge and Nutritional Status

Table 1. Mother's Education Level

Education	N	%
Highschool	5	15,625%
Diploma	2	6,25%
Bachelor	23	71,875%
Master	2	6,25%

It was discovered that the mother had completed the requirements for a bachelor's degree in the majority of cases (71.875%). (23 people). After then, the percentage of high school graduates was 15.625%. (5 people). And the proportion for both the diploma level and the master's level is the same, coming in at 6.25 percent each (2 people).

The results of the correlation test between mothers' nutritional knowledge and their children's nutritional status were 0.061 (signed 2-tailed) greater than the significant level of 0.05, which indicates that the p-value was greater than 0.005. These findings are based on statistical tests using Spearman's rank analysis. That there is no substantial association at all, which indicates that the hypothesis should be dismissed.

Table 2. Spearman's Rank Test of Nutritional Status with Mother's Knowledge of Nutrition

Spearman's rho		Nutritional Status	Mother's Knowledge of Nutrition
Nutritional Status	Sig. (2-tailed)		.061
Mother's Knowledge of Nutrition	Sig. (2-tailed)	.061	

One feature of a mother's parenting style that has an indirect influence on the nutritional status of her kid is the degree to which she is aware of nutrition. This influence is exerted via the mother's influence on the child's eating habits. Shrestha et al (2020) explain the major factors that have a direct impact on the nutritional state of the kid are the child's food intake and the condition in which they are infected. Both factors are interrelated. There are a great number of other elements that might influence the nutritional condition of the kid (Phantumvanit et al., 2018). Parents, and particularly mothers, are the ones who have the strength to be able to create strategies for feeding children, controlling the habits of children, and managing mothers' emotions in response to the limits that children have. This is because parents are the ones who can create these strategies. However, there are circumstances in which parents who have a high level of knowledge may choose not to apply this information to their children. This is because it may be difficult for parents to convince their children to consume things that are not necessarily beneficial for their bodies, even if these foods are the children's favourites. This is true even if the parents consider themselves to be health advocates.

The findings of the observations showed that the vast majority of the students exhibited the behaviour pattern of being moody and fussy eaters (with variable moods and appetites), even during mealtimes. This was discovered as a result of the fact that most of the students exhibited the behaviour. Additionally, the school verified that, based on observations made at school, numerous moms brought nutritional products that were not approved for various impairments. This information was gleaned through events that occurred at the school. For instance, the school has verified that some moms gave their autistic children fast snacks that included a considerable quantity of gluten and sugar. These snacks were brought in by the mothers.

Therefore, to circumvent this challenge, the school conducts food inspections immediately before the beginning of each class, and it is necessary to remove any food products that are forbidden for students who have particular impairments. This event indicates that mothers of schoolchildren often put their children's needs ahead of their own, assuming that their children are still interested in ingesting meals (Oncini, 2020). This is feasible since the majority of students' mothers have jobs, which means they have a limited amount of time to dedicate to the process of childcare. Because of this, students can have childcare arrangements.

There is no connection between the level of education possessed by a woman and the sorts of foods consumed by her offspring when they are maturing and developing their palates. Not only does a person's degree of nutrition information influence their food choices and eating habits, but also the person's attitudes and behaviour, which are the consequence of putting that knowledge into practice, influence these aspects of a person's life. Because of this, it is of the utmost importance for mothers to have the ability to apply their knowledge to their attitudes and actions daily so that they can always put the requirements of the child ahead of the desires of the child. This is because the child's needs always come first.

Studies done in the past have shown that there is no substantial link between a mother's level of knowledge about food and the nutritional condition of her autistic child. According to Zhu et al (2021), It has also been shown that the degree to which autistic children's moms understand nutrition is adversely related to the degree to which their children are nutritionally healthy. Most mothers who have children with a nutritional status that is considered normal have provided the greatest number of incorrect answers, whereas the mothers who have children with a nutritional status that is indicative of being underweight have provided the least number of incorrect answers.

3.2. Relationship between Food Intake and Nutritional Status

The following are the findings of the correlation test that was achieved between food consumption and nutritional status. These results were produced via the use of statistical tests and Spearman's rank analysis.

The result of the correlation test between nutritional status and energy intake is 0.262 (signed 2-tailed), which is greater than 0.05 (). This indicates that there is no association between nutritional status and energy intake. 0.204 is a relatively low strength, which indicates that the association between the two variables is not very strong. The direction of the link between the two variables is that which is positive (Schober et al., 2018). The result of the correlation test between nutritional status and protein intake was 0.341 (signed 2-tailed), which was more than or equal to 0.05. This indicates that there was no association between protein intake and nutritional status. The coefficient of determination for the link between the two factors is 0.174, which indicates that it is a very weak association. The direction of the link between the two variables is that which is positive.

The result of the correlation test between nutritional status and fat intake was 0.410 (signed 2-tailed), which was more than 0.05), indicating that there is no association between fat intake and nutritional status. The coefficient of determination for the link between the two variables is 0.151, which indicates that it is a very weak association (Katte et al., 2019). According to Xiong et al. (2020), the direction of the link between the two variables is that which is positive. The result of the correlation test between nutritional status and carbohydrate consumption was 0.489 (signed 2-tailed), which was more than 0.05 (). This indicates that there was no association between nutritional status and fat intake. The coefficient of determination for the two variables is 0.127, which indicates that there is not much of a connection between them at all. The correlation between the two variables is moving favourably.

The hypothesis is not supported since the results of the statistical test shown above indicate that there is no association between the amount of food consumed and the nutritional state of an individual. On the other hand, the findings of the statistical test demonstrate that the consumption of a single nutrient is usually always connected (p less than 0.05).

Both direct and indirect factors might influence the nutritional state of an individual. Intake of food and infectious illnesses that are carried by a person are examples of direct causes, whereas parenting, accessibility of food, sanitation and hygiene practices, and the provision of health care services are examples of indirect factors.

According to the findings, an insufficient amount of food is consumed daily when eating habits are erratic, there is a frequency of eating less than three meals and less than two diversions, meal timings are erratic, and there is consistency in the food's composition. This is backed by the fact that most students suffer from digestive diseases, have the tendency of being choosy about food (only like certain kinds of food and avoiding particular meals), and are prone to becoming moody (at will), even at mealtimes. Because there is a lengthy gap between dinner and breakfast the following day, breakfast is very important because the body will attempt to boost blood sugar by extracting fat reserves because of lower glucose levels in the body. This occurs when there is a long gap between dinner and breakfast. Because it deprives the brain of its normal energy sources, this process might make it difficult for youngsters to concentrate on what they are learning. At the very least, breakfast may provide 25 percent of the total daily calorie need. In the meanwhile, most people who participated in the research did not complete all of the requirements.

Ingestion of food is crucial, but it's also important to pay attention to how the body uses the nutrients it gets from food (Smith et al., 2019). Both main and secondary variables may influence how efficiently the body utilizes the nutrients that are taken into it. According to Amaral e Melo et al. (2020), the primary variables are those that are responsible for an inadequate or excessive intake of nutrients as a result of the improper composition of the food that is ingested, both in terms of the quality and the amount. For instance, a lack of information on the significance of proper nutrition for the well-being of families, an absence of food availability within the family, financial constraints that prevent families from providing sufficient nourishment, and improper eating habits (Scott & Vallen, 2019). Secondary variables are those that influence the body's use of nutrients, which means that the nutrients that enter the body are unable to satisfy the demands of the body because of disruptions in the body's utilization of those nutrients.

Some examples of these kinds of ailments include digestive diseases, absorption issues, metabolic abnormalities, and problems with excretion (Dumic et al., 2019). Therefore, to distinguish between a primary nutritional insufficiency and a secondary nutritional deficiency, it is essential to not only know what a person consumes but also how the body absorbs and makes use of these nutrients. According to Deniculatin et al (2018) only then will it be possible to determine which type of nutritional deficiency a person is suffering from. Even though this is not the case for all nutrients, this may be discovered by using tests that assess the levels of nutrients that are present in the blood. Because this study was conducted on participants who suffered from mental and/or physical illnesses, the consumption of nutrients in their bodies was considerably influenced by secondary variables. Therefore, the findings of this study may not apply to healthy individuals. These secondary causes included disruptions in the body's ability to take in nutrients, digest those nutrients, and then eliminate those nutrients from the body.

Disorders of the food consumption mechanism can manifest themselves in a variety of ways, including physically and mentally (Stankovska et al., 2020). According to Fegert et al (2020), children with disabilities have an increased risk of developing nutritional issues due to these disorders, which put them at an increased risk of developing nutritional issues. In addition, several kinds of impairments need the usage of specific diets to treat the condition. According to Wasserman et al (2019), local health centres receive a considerable number of paediatric patients seeking treatment for metabolic disorders each year. In children, metabolic problems are a primary cause of mental diseases such as autism, eating disorders, learning impairments, and a variety of other conditions (Dhir et al., 2019). Many different diseases have the potential to result in metabolic problems. These disorders are characterized by the accumulation of complex toxic compounds or enzymatic activity, either of which might result in problems with the cell's ability to produce energy or with the protein's function.

4. Conclusion

This study concluded that there was no significant relationship between children's food intake and mothers' nutritional knowledge with the nutritional status of students aged 7-15 years. It is necessary to carry out further research or similar research over a longer period to ascertain the relationship between food intake and nutritional status in students with special needs. Further research can pay attention to other factors related to nutritional status including parenting styles (including attitudes and behaviour) of parents, students' physical activity, student psychological factors, co-morbidities related to nutrient metabolism in the body in each disability, and other complex variables not examined in this study.

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