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The Effect of Nutrition Counseling on Mother's Knowledge and Nutrition Information in Autistic Children in Banda Aceh City

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Abstract

BACKGROUND: Autism spectrum disorder (ASD), commonly abbreviated as ASD or autism, is a condition of neurodevelopmental brain disorder that causes sufferers to experience difficulties in communicating and socializing. Parents go through difficult phases after their child is diagnosed with ASD. Therefore, increasing the knowledge capacity of parents and nutritional intake in autistic children is very important. Children with autism often experience a lack of certain nutrients that affect the growth, development, and fulfillment of specific nutritional needs.

AIM: The aim of the study was to analyze the effect of nutrition counseling on Mother's knowledge and nutrient intake in Autistic Children in Banda Aceh City.

METHODS: The research design used in this study was quasi-experimental with a pre- and post-test observational approach. This research was conducted in four locations, namely, the Autism Child Service Center, The Nanny Children Center, Bintang Kecil, and My Hope Special Need Center from October to December 2021 in Banda Aceh. The sample in this study was the entire population, which amounted to 30 children with autism—analysis of the data using univariate and bivariate using the T-test dependent.

RESULTS: From the results of statistical tests, it is known that there is a significant effect of nutritional counseling on mothers' knowledge and intake of gluten and casein sources of food in autistic children with $p < 0.05$). Nutritional counseling has been shown to increase maternal knowledge. The average knowledge of mothers before nutrition counseling was 84.56 and after 88.62. The average intake of gluten and casein sources before nutritional counseling was 82.59 and after 77.12.

CONCLUSION: There is a significant effect of nutritional counseling on mothers' knowledge and nutrient intake in autistic children.

Introduction

Autism is a neurodevelopmental disorder characterized by widespread impairments in social communication, social skills, social integration, stereotyped behavior, social imagination, and restricted patterns [1], [2].

Autism spectrum disorders (ASDs) are developmental disorders and conditions that appear in early childhood and, in most cases, persist throughout life. The autistic disorder requires a long time, expensive treatment costs, a treatment that does not guarantee a cure because there is no cure for the disorder, the clinical course is uncertain, and there is no certainty about the future [3], [4]. ASD causes a developmental disorder characterized by a lack of social interaction, communication, limited interest, and behavior in infancy and toddlerhood [5]. Based on world data, the prevalence of autism has been estimated at 13/10,000 and is believed to be increasing [6], [7].

A review of 23 studies found that estimates of ASD prevalence across Asian countries/regions (China, Japan, Israel, Iran, Taiwan, and Indonesia) varied from 1.1 to 21.8/10,000 [8]. People with autism in Indonesia have increased rapidly compared to 10 years ago, with only one person out of 1000 people. In addition, based on reports from therapists, doctors, and psychiatrists who handle autistic cases, it is estimated that the number of autistic sufferers increases by around 3–5 cases/year [9]. The high number of people with autistic disorders, especially in Indonesia, indicates that efforts to treat autism require attention from various parties. Autism disorders in Indonesia are considered as karma, past sins of parents, or because of a parenting pattern that spoils children too much [10]. Autism also often has an impact on education and job opportunities. Individuals with autism need health services accessible for general health-care needs like the rest of the population, including promotive, preventive, and disease treatment services. Individuals diagnosed with autism have a higher rate of unmet health-care needs than the general population due to inadequate knowledge and understanding of health-care providers about autism [11].

Selective habits in choosing certain foods will also impact the growth and development of children

with autism. Autistic children can also experience a deficiency of certain nutrients such as calcium caused by a gluten-free or casein-free diet that they do, and it also affects the growth, development, and fulfillment of specific nutritional needs [12].

Autistic behavior can be overcome in several ways, including medical treatment, psychological therapy, behavioral management, diet management, and counseling. Nutrition counseling is carried out to increase the knowledge and ability of individuals or families to overcome the problems they face, including changes in eating patterns or other healthy living habits [13]. Counseling is a personal approach to help individuals better understand the nutritional problems they face and motivate them to make behavioral changes, including changes in infant and child feeding practices [14]. Several studies show that cadres' knowledge of child feeding practices is still low; gaps in cadre counseling skills are the inability to translate knowledge into existing messages and practices and failure to provide need-based advice and advice [15].

In connection with the background of the problem, the purpose of this study was to analyze the effect of nutritional counseling on maternal knowledge and nutrient intake in autistic children in Banda Aceh City.

Methods

The research design used in this study was quasi-experimental with a pre- and post-test observational approach. The pre- and post-test observational approach looks at nutritional counseling to mothers' knowledge and nutritional intake of autistic children. This research was carried out in four locations: the Autism Child Service Center, The Nanny Children Center, Bintang Kecil, and My Hope Special Need Center. The research is planned from October to December 2021 in Banda Aceh. The population in this study were all people with autism who were registered in four research locations, namely, the Autism Service Center, The Nanny Children, Bintang Kecil, and My Hope Special Need Center, totaling 30 autistic children while the respondents are the parents of the autistic child. The sample in this study was the entire population, which amounted to 30 autistic children. In the form of a mother's knowledge, the primary data in this study were collected by filling out a questionnaire technique by the respondents.

Data on nutrient intake in autistic children were carried out utilizing respondents recording all foods containing casein and gluten consumed by autistic children from waking up in the morning until sleeping again at night for three consecutive days. Secondary data are data related to the number of autistic children, a list of names of autistic children, age, and gender obtained directly from the research location. They were collecting data using a questionnaire.

Univariate analysis in the form of descriptive data from each variable is tabulated to see the frequency distribution and characteristics of the variables. Bivariate analysis was carried out to see the effect of parental knowledge on nutrient intake in autistic children and was carried out using the T-test dependent. The presentation of this data is done to facilitate research in making decisions so that researchers can explain the results of their research which are presented in tabular and textual forms. The Research Ethics Committee of Polytechnic of Health-Ministry of Health, Mataram, Indonesia, approved this study, with approval number: LB.01.03/6/3772/2021.

Results

Univariate analysis

Characteristics of respondents

Based on Table 1, most of the parents of autistic children aged 18–40 years were 28 people (77.78%), with the education level of most of them being higher education as many as 22 people (61.1%) and most of the parents of autistic children working as many as 24 people (66.7%).

Table 1: Characteristics of age, education, and occupation of parents of children with autism in Banda Aceh City

Mother characteristics	Amount, n (%)
Age (years)	
Young adults (18–40)	26 (77.8)
Middle adulthood (41–60)	88 (22.2)
Education	
Base	9 (25.0)
Intermediate	55 (13.9)
Tall	20 (61.1)
Profession	
Work	22 (66.7)
Does not work	12 (33.3)
Amount	34 (100)

Sample characteristics

Based on Table 2, most of the autistic children aged 6–9 years were 25 children (69.4%), while the gender of autistic children was male, primarily as many as 30 children (83.3%).

Table 2: Characteristics of age and sex of children with autism in the city of Banda Aceh

Child characteristics	Amount, n (%)
Child age (years)	
6–9	24 (69.4)
10–12	10 (30.6)
Gender	
Man	29 (83.30
Woman	5 (16.7)
Total	34 (100)

Bivariate analysis

Average knowledge of mothers before and after nutrition counseling

Based on Table 3, it can be seen that the average knowledge of mothers before nutrition counseling was 84.56 and after 88.62.

Table 3: Average knowledge of mothers before and after nutritional counseling for autistic children in Banda Aceh city

Mother's knowledge	n	Minimum	Maximum	Average
Before	34	75	95	84.56
After	34	80	98	88.62

Average intake of food sources of gluten and casein before and after nutritional counseling

Based on Table 4, it can be seen that the average intake of gluten and casein sources before nutritional counseling was 82.59 and after 77.12.

Table 4: The average intake of gluten and casein sources before and after nutritional counseling for autistic children in Banda Aceh city in 2021

Intake of gluten and casein	n	Minimum	Maximum	Average
Before	34	60	101	82.59
After	34	55	98	77.12

The effect of nutritional counseling on mother's knowledge and intake of gluten and casein sources in autistic children in Banda Aceh

Based on Table 5, it can be seen that the average increase in mother's knowledge is and the average decrease in the intake of food sources of gluten and casein is from the results of statistical tests using the t-test dependent test obtained ($p < 0.05$), it can be concluded that there is a significant effect of nutritional counseling on mothers' knowledge and intake of gluten and casein sources in children with autism.

Table 5: The effect of nutritional counseling on mother's knowledge and intake of gluten and casein sources of food in autistic children in Banda Aceh City in 2021

Variable	n	Average	SD	p
Mother's knowledge before and after	34	−4.059	1.301	0.00
Intake of food sources of gluten and casein before and after	34	5.471	3.595	0.00

SD: Standard deviation.

Discussion

The statistical test results obtained ($p < 0.05$) show a significant effect of nutritional counseling on mothers' knowledge, and intake of gluten and casein sources of food in autistic children was essential. The average knowledge of mothers before nutrition counseling was 84.56 and after 88.62. The average intake of gluten and casein sources before nutritional counseling was 82.59 and after 77.12.

Intake of gluten and casein is associated with low levels of maternal education. Mothers with low levels of education are more difficult to receive information than mothers with higher education levels. A mother's lack of knowledge can affect children's food intake at home and affect brain function disorders in autistic children. A good level of knowledge of mothers is expected to prevent the consumption of wrong and bad food. A rigorous diet free of gluten and casein can reduce levels of opioid peptides and can affect autistic symptoms in some children.

A mother's knowledge about autism and a good level of understanding will be beneficial in carrying out the daily mother's role in caring for autistic children. Knowledge will be a strength for mothers to find strategies in accessing services, managing children's eating habits, and managing their emotions toward children's limitations. Families who have recently received a diagnosis of autism in their child can gain knowledge when joining a community where they can discuss the best way to deal with autistic children [16]. Parents who are members of a virtual community discuss with other community members matters relating to the problem of handling children's behavior [17], [18].

Valid and accurate information on how to handle autistic children helps parents prepare to deal with pressure and stress, thereby increasing their ability to manage disorders in their children [19]. Knowledge of maternal nutrition needs to be continuously improved to follow good attitudes and behavior. After being given nutritional counseling, most of the respondents felt the benefits, their way of thinking changed to a positive way of thinking, so it was not too difficult to influence the respondents to apply what they know, especially in improving consumption patterns of children with autism. Several efforts can be made, one of which is an intervention that focuses on parents for children with ASD [20]. In addition, the use of parent-child interaction therapy shows promise for treating disruptive behavior in children with ASD [21]. Cultural and contextual factors can also influence the way families to cope with ASDs [22].

Parent-focused interventions for children with ASD have accumulated ample evidence of effectiveness for treating the disorder's core symptoms [23]. Nutrition counseling in this study was carried out using leaflet media. The complex problems of ASD children put parents in a state of uncertainty or uncertainty about the future. They need the means to reduce uncertainty (uncertainty reduction): To seek as much information as possible through the internet. The presence of a virtual community answers needs of parents of children with autism.

Through virtual communities, especially on social media, they can communicate and obtain information about handling children with autism. In addition to information, social support is also needed by parents to be able to survive and seek the best actions

to deal with their children with ASD. Research shows that families who have recently received a diagnosis of autism in their child benefit from being in a group where they can discuss how best to treat their child with ASD [16]. Through these groups, parents get increased skills, an increased sense of power, and belonging. Parents can connect and provide each other with support and skills in dealing with day-to-day issues of raising children.

Conclusion

There is a significant effect of nutritional counseling on mothers' knowledge and intake of nutrients in children with autism.

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