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Examination of Socio-Demographic Attributes and Body Mass Indices of Individuals with Disabilities

Engelli Bireylerin Sosyo-Demografik Özellikleri ile Beden Kitle İndekslerinin İncelenmesi

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ABSTRACT

Introduction: Sociodemographic characteristics and disability have a significant impact on body mass index and are crucial for improving health outcomes in this population.

Aim: The purpose of this study was to investigate the associations between sociodemographic factors and body mass index in children and people with disabilities.

Methods: The descriptive study's sample consisted of impaired children who were registered at a disability center (n = 64). The research data were obtained face-to-face between March and July 2024 using a questionnaire form that included sociodemographic information as well as information on specific nutritional parameters. In addition to descriptive statistics, the Mann-Whitney U test and correlation analysis were performed to assess the research findings.

Results: A total of 54.1% of the impaired individuals acquired their disability due to a traumatic event during the perinatal period, and 64.9% of the disabled individuals were male. Additionally, 62.2% were partially dependent on daily activities, while 45.9% spent 3-4 hours per day in front of a screen. The body mass index (BMI) was 25.38 ± 5.17 for females, 22.00 ± 5.81 for males, and 25.82 ± 7.42 for adults. A significant positive correlation was observed between the commonly consumed foods of impaired children and their overall diet. In contrast, a negative correlation was found between their sleep duration and the foods they routinely consumed (r = 0.544, p = 0.002; r = -0.385, p = 0.039).

Conclusion: The study discovered that the frequency of moderate obesity and obesity among people with impaired people was quite low. The study's findings highlight the need to improve impaired children's sleep length and eating habits.

Keywords: Anthropometry; body mass index; demography; obesity; public health.

ÖZ

Giriş: Sosyo-demografik özellikler ve engellilik, beden kitle indeksi üzerinde önemli bir etkiye sahiptir ve bu popülasyonun sağlık sonuçlarını iyileştirmek açısından kritik öneme sahiptir.

Amaç: Bu çalışma, engelli çocukların ve yetişkinlerin sosyodemografik özellikleri ile beden kitle indeksleri arasındaki ilişkiyi incelemek amacıyla yapılmıştır.

Yöntem: Betimleyici çalışmanın örneklemi, bir engelli merkezine kayıtlı engelli çocuklardan oluşmuştur (n = 64). Araştırma verileri Mart-Temmuz 2024 tarihleri arasında sosyodemografik özellikler formu ve belirli beslenme özellikleriyle ilgili bilgileri içeren anket formuyla yüz yüze toplandı. Araştırma verileri tanımlayıcı istatistiklerin yanı sıra, Mann Whitney U testi ve korelasyon analizi kullanılarak değerlendirilmiştir.

Bulgular: Toplamda, engelli bireylerin %54,1'i perinatal dönemde meydana gelen travmatik bir olay nedeniyle engelli hale gelmiştir ve %64,9'u erkektir. Ayrıca, %62,2'si günlük aktivitelerde kısmen bağımlıyken, %45,9'u günde 3-4 saatini ekran karşısında geçirmektedir. Beden kitle indeksi (BKİ) kadınlar için 25,38 ± 5,17, erkekler için 22,00 ± 5,81 ve yetişkinler için 25,82 ± 7,42 olarak belirlenmiştir. Engelli çocukların yaygın olarak tükettikleri besinler ile genel diyetleri arasında anlamlı ve pozitif bir korelasyon gözlemlenmiştir. Buna karşılık, uyku süreleri ile rutin olarak tükettikleri besinler arasında negatif bir ilişki bulunmuştur (r = 0.544, p = 0.002; r = -0.385, p = 0.039).

Sonuç: Çalışmada engelli bireylerin orta dereceli obezite ve obezite yaygınlığının ise oldukça düşük olduğu görüldü. Çalışma sonuçları, engelli çocukların uyku sürelerinin ve yeme alışkanlıklarının iyileştirilmesinin gerekliliğini ortaya koymaktadır.

Anahtar Kelimeler: Antropometri; beden kitle indeksi; demografi; halk sağlığı; obezite.

Introduction

Disability comprises a broad and intricate array of conditions that involve activity constraints and participation limitations. The constraints and limitations arise from the interplay between an individual's physical or mental disabilities and the obstacles in their social and environmental contexts that impede societal involvement (Grills et al., 2020). According to the 2023 report by the World Health Organization (WHO), approximately 15% of the global population has a disability. This significantly affects their access to healthcare services and overall quality of life (WHO, 2023). Beyond challenges in healthcare access, individuals with physical disabilities frequently encounter substantial environmental and physical barriers that affect their health outcomes, including body mass index (BMI). Reduced mobility and limited opportunities for physical activity increase the risk of obesity and other metabolic disorders. Research indicates that individuals with mobility impairments engage in lower levels of physical activity, negatively impacting BMI regulation (Shahat & Greco, 2021; Shepherd et al., 2021). Addressing these challenges requires targeted interventions to improve accessibility and promote inclusive physical activity programs for individuals with disabilities.

The long-term effects of disability can present significant challenges for individuals; however, a comprehensive assessment of their circumstances, combined with adequate personal and socio-environmental support, can foster a more positive outlook on life. (Babik & Gardner, 2021; Lloyd et al., 2014) . The socio-demographic attributes and health situations of individuals with disabilities are essential determinants in enhancing their quality of life. Various factors, including gender, educational attainment, and economic status, substantially affect the efficacy of interventions (de Oliveira et al., 2015). According to research studies, understanding the correlation between these factors and body mass index (BMI) provides critical insights into the accessibility and effectiveness of healthcare interventions for underprivileged communities (Kep et al., 2022; Park & Kim, 2021). In particular, low socioeconomic status can contribute to social isolation among individuals with disabilities, further exacerbating disparities such as limited health promotion, restricted access to services, difficulties in obtaining information, and communication barriers (de Oliveira et al., 2015).

Moreover, the influence of handicap on restricting physical activity or altering dietary practices might directly impact BMI (Lambert et al., 2019). Inadequate nutrition and detrimental lifestyle choices precipitate chronic diseases, resulting in reduced quality of life, elevated healthcare costs, and potential premature death (Oladipo et al., 2023). Given that obesity has impacted almost 61% of the adult population and 22.5% of the young population in Turkey in recent years, policymakers, healthcare professionals, and patients need to comprehend the socio-demographic features and BMI values (Yavuz et al., 2024). Clinical anthropometric procedures assess body attributes to evaluate health, growth, and nutrition. They aid in diagnosing, monitoring, and managing conditions by analyzing body composition, including fat percentage, muscle mass, and fat distribution (Safaei et al., 2021). Considering these factors, it is imperative to prioritize the advancement of health for individuals with disabilities in both policies and healthcare service delivery.

Aim

This study aims to deliver a thorough examination of the correlations between socio-demographic factors and BMI values in children and adults with disabilities. Analyzing the socio-demographic attributes and BMI values of individuals with disabilities can enhance the formulation of more effective strategies to improve their health outcomes.

Research Questions

1. What are the socio-demographic characteristics and anthropometric measurements of individuals with disabilities?

2. How is obesity risk assessed based on anthropometric measurements?

3. Is there a significant correlation between body mass index (BMI) and other variables?

Methods

Study Design

This descriptive study was conducted between March and July 2024.

Study Setting

This study was conducted in a disability care and rehabilitation center, providing services for individuals with various disabilities.

Study Population and Sample

The study population consisted of 150 individuals with disabilities registered at a disability center (N = 150). However, during the research process, 50 individuals, although registered, did not attend the disability center, and 20 individuals with severe intellectual disabilities who did not meet the inclusion criteria also declined participation. The study included individuals with disabilities aged 7 years and older, who were literate, had no communication barriers in Turkish, and were willing to participate in the study. To determine the sample size, with an alpha level of 0.05 and a 95% confidence level, it was calculated that a total of 64 individuals needed to be reached (Yazicioglu & Erdogan, 2014). To achieve the required sample size of 64, the convenience sampling method, one of the non-probability sampling techniques, was used.

However, 27 individuals from the initial sample of 64 either declined to participate or provided incomplete responses, resulting in their exclusion from the study. Consequently, the study was completed with a total of 37 participants.

Ethical Considerations

Before initiating the study, ethical approval was obtained from the Scientific Research and Publication Ethics Committee of Sakarya University of Applied Sciences (Date: 11.01.2024 and No: 40/3), and permission was secured from the institution where the study was conducted (2024-121648). The researchers adhered to the guidelines outlined in the Declaration of Helsinki throughout the study. Comprehensive information about the study was provided to individuals with disabilities and their parents. Written consent was obtained from the parents of participants under 18 years old and from participants over 18 years old. During this process, it was ensured that participants were fully

informed about the study, and voluntary participation was secured.

Data Collection Form

The questionnaire, developed by researchers based on a literature review, consisted of 22 questions addressing socio-demographic characteristics and specific dietary factors (Park & Kim, 2021; Yucel & Toprak, 2016).

Application Procedures

Weight, height, waist circumference, and hip circumference were all anthropometric measurements used to compute Body Mass Index (BMI) and Waist-to-Hip Ratio. Height was measured using a Martin-type anthropometer, with participants standing barefoot and their heads aligned with the Frankfurt plane. During measurement, care was taken to ensure participants' shoulders were relaxed, heels together, and feet positioned at a 45-degree angle. Weight was measured using a digital scale with 100-gram precision. Participants were weighed with minimal clothing, barefoot, and while standing upright without support, distributing their weight evenly on the scale. Waist circumference measurements varied according to body shape. For thin individuals, measurements were taken at the narrowest point of the waist, and for overweight individuals, measurements were taken at the midpoint between the last rib and the top of the iliac crest. A tape measure was gently placed on the skin without applying excessive force, and measurements were recorded in millimeters.

Hip circumference was measured while the individual stood upright using a tape measure, recorded at the most prominent part of the femoral trochanter points parallel to the ground, and documented in millimeters (Yücel & Toprak, 2016). Subsequently, BMI and WHR were evaluated based on reference values recorded by the World Health Organization (WHO). For adults, BMI classifications were as follows: $18.5 \leq BMI < 25$ kg/m^2 as normal, $25 \leq BMI < 30$ kg/m^2 as overweight, and $30 \leq BMI < 35$ kg/m^2 as Class 1 obesity. For the 5–19 age group, percentiles and z-scores were used: $-2 \leq$ Z-Score $\leq +1$ or $>$ 50th percentile as normal, $+1 <$ Z-Score $\leq +2$ or $>$ 85th percentile as overweight, and Z-Score $> +2$ or $>$ 97th percentile as obese (World Health Organization, 2022).

Waist-to-Hip Ratio (WHR) was evaluated using reference values determined by the World Health Organization (WHO, 2011). WHR values of 0.85 or higher in women and 0.90 or higher in men were classified as overweight or obese (Moore et al., 2015). Anthropometric examination and evaluations are crucial for assessing the general health status of individuals and identifying potential risk factors.

Data Analysis

The research data were analyzed with SPSS 25.0 software. Descriptive statistics, including frequency, percentage, arithmetic mean, and standard deviation, were used. The Kolmogorov-Smirnov test was used to validate the normality assumptions. Non-normally distributed data were evaluated with the Mann-Whitney U test and Spearman correlation analysis. A p-value of < 0.05 was judged statistically significant.

Results

Table 1: Distribution of Socio-Demographic Characteristics of Individuals with Disabilities (n = 37)

Variables	Mean ± SD	
Age	14.51 ± 5.72	
	n	**%**
Gender		
Female	10	27.0
Male	19	51.4
Adult	8	21.6
Perceived Income		
Moderate level	37	100.0
Education Level		
Literate	9	24.3
Primary education	21	56.8
High school	7	18.9
Disability Status		
Prenatal	20	54.1
During birth	8	21.6
Postnatal	2	5.4
Mild intellectual disability	7	18.9
Type of disability		
Disability due to chronic diseases	3	8.1
Psychiatric disorders (disorders associated with schizophrenia or psychosis)	15	40.5
Visual/Speech or Language/Hearing impairment	8	21.6
Orthopedic/physical disability	8	21.6
Physical and cognitive disability	3	8.2
Assistive device used		
None	35	94.6
Hearing aid	1	2.7
Finger extension device	1	2.7
Dependency in Activities of Daily Living (ADL)		
Completely independent	3	8.1
Partially dependent	23	62.2
Completely dependent	11	29.7
Physical activity		
Yes	14	37.9
No	18	48.6
Not applicable	5	13.5
Daily screen time while sitting		
<1 hour	6	16.2
1–2 hours	9	24.7
3–4 hours	17	45.9
5 hours or more	5	13.5
Sleep duration		
<6 hours	4	10.8
6–8 hours	20	54.1
8 hours	13	35.1

SD: Standart Deviation

Socio-Demographic Characteristics and Anthropometric Measurements of Individuals with Disabilities

This section presents the socio-demographic characteristics of the individuals with disabilities who participated in the study.

When Table 1 is examined, various data regarding the demographic and health status of individuals with disabilities are presented. Of the participants, 64.9% were male, and 56.8% had completed primary education. A total of 54.1% became disabled due to a traumatic event during the perinatal period, 40.5% had a psychological disorder, and 62.2% were partially dependent in their activities of daily living. Additionally, 94.6% of the participants reported not using any assistive devices due to their disability. Furthermore, 48.6% indicated that they did not engage in physical activity, while 45.9% stated that they led a sedentary lifestyle, spending 3–4 hours daily in front of a screen.

The average anthropometric values for children and adults with disabilities are presented in Table 2. No statistically significant differences were found between male and female children in any of the anthropometric values obtained ($p > 0.05$).

Table 2: Anthropometric Measurements of Individuals with Disabilities

	n	Mean ± SD	Test and Significance
BMI			
Female children	10	25.38 ± 5.17	$Z^{\dagger} = -1.927$ $p = 0.054$
Male children	19	22.00 ± 5.81	
Adults	8	25.82 ± 7.42	
WHR (Waist-to-Hip Ratio)			
Female children	10	0.84 ± 0.07	$Z^{\dagger} = -0.780$ $p = 0.435$
Male children	19	0.83 ± 0.13	
Adults	8	0.86 ± 0.10	

SD: Standard Deviation; †Z: Mann-Whitney U test; **$p < 0.05$**

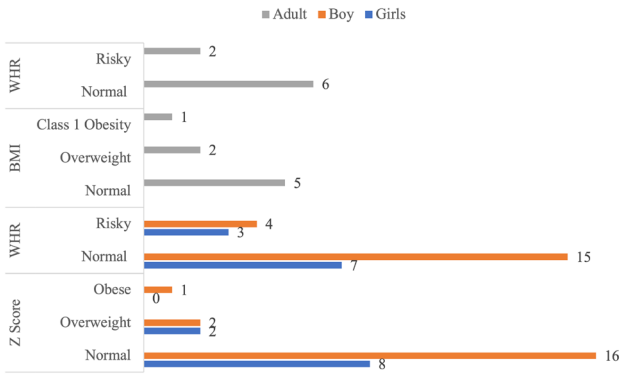

Figure 1: Obesity Risk Assessment Based on Anthropometric Measurements of Individuals with Disabilities

Obesity Risk Assessment Based on Anthropometric Measurements

Figure 1 presents a graph illustrating the risky and normal statuses of Z-score and WHR (waist-to-hip ratio) values. In this graph, the blue color represents the number of normal Z-scores, while the orange color represents the number of risky WHR values.

The average Z-Score value for female children is positive, and their BMI (Body Mass Index) and WHR values are generally within normal limits. For male children, the average Z-score value is negative, and their BMI and WHR values also fall within normal ranges. It was determined that the number of risky WHRs in male children is lower compared to female children.

Significant disparities in BMI levels were found, with adults having a higher average Z-score value.

When examining the percentage distributions of the food groups consumed by individuals with disabilities, it becomes evident that certain food groups are consumed more frequently. For instance, vegetables account for 45.9% of daily consumption, fruits for 40.5%, grains for 45.9%, dairy products for 35.1%, and protein sources such as meat and fish for 32.4%. These distributions help us better understand the dietary patterns and tendencies of individuals with disabilities (Figure 2).

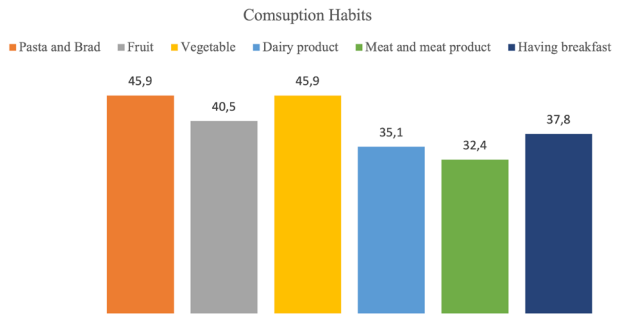

Figure 2: Percentage Distribution of Daily Consumed Food Groups by Individuals with Disabilities

Correlation Between BMI and Other Variables

Table 3 presents the relationships between the BMI values of children with disabilities and other socio-demographic variables. No statistically significant relationships were found between BMI and age, gender, level of dependency in Activities of Daily Living (ADL), engaging in regular exercise, time spent sitting in front of a screen, dietary habits, frequently consumed foods, or sleep duration among children with disabilities.

Table 3 also shows a moderate and statistically significant correlation between the frequently consumed foods and the diets of children with disabilities ($r = 0.544$; $p = 0.002$). Additionally, a weak negative and statistically significant relationship was observed between sleep duration and the foods regularly consumed by children with disabilities ($r = -0.385$; $p = 0.039$).

Discussion

This study highlights the importance of assessing the demographic and health status, physical activity habits, dietary preferences, and the implementation of comprehensive strategies in the daily living activities of individuals with disabilities. The findings are significant for policymakers and healthcare professionals, helping improve knowledge about the needs of individuals with disabilities.

The study indicated that 54.1% of the participants had congenital

Table 3: Correlation Results Between Body Mass Index and Other Variables Among Individuals with Disabilities

			1	2	3	4	5	6	7	8	9
1	**BMI**		1								
2	**Age**	r‡	0.247	1							
		p	0.197								
3	**Gender**	r‡	-0.364	0.188	1						
		p	0.052	0.328							
4	**ADL Level of Dependency**	r‡	0.111	-0.153	-0.075	1					
		p	0.566	0.427	0.698						
5	**Engaging in regular exercise**	r‡	0.166	-0,316	-0.307	0.196	1				
		p	0.390	0.095	0,105	0,309					
6	**Time spent sitting in front of a screen**	r‡	-0.031	0.269	0.315	-0.130	-0.046	1			
		p	0.875	0.158	0.096	0.500	0.812				
7	**Dietary habits**	r‡	0.119	-0.094	-0.010	0.278	-0.098	0.124	1		
		p	0.539	0,627	0,960	0,144	0.613	0.523			
8	**Frequently consumed food**	r‡	0.163	-0.272	-0.060	0,248	0.063	-0.278	0.544	1	
		p	0.397	0.153	0.756	0.194	0.744	0.145	**0.002**		
9	**Sleep Hours**	r‡	-0.126	-0.027	-0.005	-0.020	0.135	-0.124	-0.137	-0.385	1
		p	0.515	0.889	0.980	0.920	0.485	0.520	0.477	**0.039**	

ADL: Activities of Daily Living; **p < 0.05**; ‡r: Spearman Correlation Analysis

disabilities. The prevalence of congenital causes, such as birth defects, in the development of childhood disabilities has been underscored in prior research (Ansari, 2021; Guo & Zheng, 2020). One study indicated that 47.06% of infants were born with congenital disabilities (Guo & Zheng, 2020). These congenital defects can result in physical or intellectual disabilities, which place a substantial burden on the social healthcare system, disabled children, and their families (Shahat & Greco, 2021). Prenatal interventions and enhanced access to mental health services during pregnancy can decrease disability rates and enhance the overall health of individuals with disabilities (Tarasoff et al., 2019). Another study found that mothers who received perinatal interventions, such as magnesium sulphate, had a lower likelihood of their children developing disabilities like cerebral palsy than those who did not (Shepherd et al., 2021). This finding is supported by strong evidence. This emphasizes the significance of psychological well-being programs and prenatal care.

The extent to which individuals with disabilities are able to maintain their general functionality and quality of life is significantly influenced by their level of dependence on daily living activities. The research revealed that more than half of the individuals with disabilities were partially reliant on daily living activities. Individuals with disabilities are substantially affected by functionality, as demonstrated by prior research. Consequently, it is advisable to employ products, tools, devices, or technologies that have been specifically designed or adapted to improve functionality (David & Weinstein, 2024; De-Rosende-Celeiro et al., 2019)but little is known about how these resources can be employed to create positive learning climates. Informed by self-determination theory (SDT. Moreover, individuals with low functional capacity are more susceptible to environmental demands, which increases their susceptibility to accidents and injuries, restricts social engagement, and places a greater burden on healthcare services and caregivers (Pihtili Tas, 2023). The results of this study are consistent with the existing literature, underscoring the significance of rehabilitation and support services in facilitating the independent performance of daily living activities by individuals with disabilities (Qin et al., 2021). Evaluating lifestyle choices such as nutrition and exercise alongside BMI is crucial for determining overall health. According to the study, the largest proportion of individuals with disabilities had normal or overweight BMI. This finding aligns with global patterns of BMI distribution, showing that most people fall into the normal and overweight categories across many populations (Bhaskaran et al., 2018; Taslı & Sagır, 2021)but few studies have been large enough to reliably examine associations between BMI and a comprehensive range of cause-specific mortality outcomes. Methods: In this population-based cohort study, we used UK primary care data from the Clinical Practice Research Datalink (CPRD. Research suggests that these individuals have a lower health risk than those who are underweight or obese (Taslı & Sagır, 2021).

Having a normal or overweight BMI may indicate lower health risks in the short term, but it does not guarantee long-term health (Magalhães et al., 2014). Furthermore, significant differences in WHR were observed in descriptive statistics across gender categories, with males showing notable differences compared to females. According to a study conducted by Pınarbaşı and Hisar, the prevalence of obesity among visually impaired children was higher in males, while overweight was more prevalent in girls (Pinarbasi & Hisar, 2019). In the literatüre, demonstrated that children with disabilities have higher rates of obesity and overweight compared to typically developing children (Foster et al., 2021; Harris et al., 2018). These gender differences in BMI and WHR may result from variations

in physical activity levels, dietary habits, and metabolic factors. Research suggests that boys with disabilities may participate in different types of physical activities compared to girls, with factors such as mobility limitations, social engagement opportunities, and accessibility influencing overall activity levels (Healy et al., 2017; Shields et al., 2016). Additionally, gender-related differences in eating behaviors, nutritional intake, and parental feeding practices may contribute to disparities in body composition. Although WHR is a widely used parameter and is effective in evaluating central adiposity, the results of certain studies are still under debate (Oladipo et al., 2023). This discrepancy may be the result of a lack of standardization in the anatomical sites used for measurement or ethnic differences. Particularly in adolescents, this parameter necessitates special consideration (Foster et al., 2021; Moreira et al., 2023)multidisciplinary treatment center over a ten-year period. We stratified by age and developmental disability diagnosis. We assessed whether intake demographic or health behavior data was associated with successful reduction of adiposity over six and twelve month follow-up periods, using a ≥5% absolute reduction in percent over the 95th percentile body mass index (BMIp95.

Understanding the impact of gender on obesity and body composition in individuals with disabilities is crucial for developing tailored interventions that promote balanced nutrition, encourage physical activity, and reduce long-term health risks. Ensuring a diverse and nutritious diet for children and adults with disabilities is crucial, as behavioral challenges may arise, contributing to obesity management issues. The current study found that the dietary habits of individuals with disabilities were primarily vegetable- and carbohydrate-based. Another study reported excessive intake of protein (94.7%), carbohydrates (78.9%), and fats (84.2%) among children with intellectual disabilities (Magenis et al., 2018)breastfeeding history, weight at birth and current weight in children and adolescents with Down syndrome (DS. A study by Hoey et al. among individuals with intellectual disabilities found a high prevalence of excessive body weight (28.2% overweight and 46.8% obese) and higher energy consumption from sugars and fats, emphasizing low dietary quality (Hoey et al., 2017). These findings suggest the need for interventions addressing nutritional and health differences across genders.

The research revealed no correlation between BMI and other socio-demographic factors in children with impairments. Nonetheless, prior research yields contradictory findings. Prolonged inactivity, excessive screen time, and poor dietary practices are not directly associated with BMI; nonetheless, their influence on BMI necessitates additional elucidation (Smetanina et al., 2015; Smith et al., 2020)Lithuania. Study participants underwent anthropometric measurements. Body mass index (BMI. While prolonged inactivity, excessive screen time, and poor dietary practices were not directly associated with BMI in this study, it is essential to consider their potential long-term impact. Children with impairments may experience unique lifestyle constraints, such as reduced physical activity due to mobility limitations or accessibility barriers, which could indirectly affect BMI over time. Moreover, variations in energy expenditure, metabolic differences, and individualized dietary adaptations may contribute to the observed lack of association. The findings highlight the need for further research to explore how daily activity levels, structured physical exercise, and nutritional interventions can influence BMI in this population. The observation that healthy dietary practices correlate favourably with commonly consumed foods is corroborated by current literature in nutrition and dietetics (Cena & Calder, 2020; Haines et al., 2019)essential nutrients, and other food components play in health and disease. A large and growing body of evidence supports that intake of certain types of nutrients, specific food groups, or overarching dietary patterns positively influences health and promotes the prevention of common non-communicable diseases (NCDs. The results indicate that the BMI of children with impairments may be unaffected by these variables. Furthermore, the research indicates that the foods commonly ingested by youngsters mirror their dietary inclinations. Ensuring that commonly consumed meals are nutritious and promoting healthy eating habits can enhance overall health. Finally, a negative relationship was found between the foods frequently consumed by children with disabilities and their sleep duration. Previous research indicates that children with shorter sleep durations are significantly more likely to consume salty snacks, fast food, tea, and sugary drinks compared to those with longer sleep durations (Mozaffarian et al., 2020)the consumption frequency of some food groups including sweets, salty snacks, carbonated beverages, diet soft drinks, soft beer, fresh fruits, dried fruits, fresh juices, vegetables, packed juices, dairy products (milk, yogurt, and cheese. In a multinational cross-sectional study of 5,777 children aged 9–11 years, Chaput et al. found that shorter sleep durations and later bedtimes were significantly associated with unhealthy dietary patterns (Chaput et al., 2015).

Research indicates that insufficient sleep disrupts hormonal regulation of appetite, leading to increased cravings for high-calorie, energy-dense foods. Reduced sleep duration is associated with lower levels of leptin, a hormone that signals satiety, and elevated levels of ghrelin, which stimulates hunger, thereby promoting increased food intake (Börnhost et al., 2015; Mamun et al., 2024) Additionally, inadequate sleep can impair glucose metabolism and insulin sensitivity, elevating the risk of metabolic disorders and reinforcing cravings for carbohydrate-rich foods (Mozaffarian, 2016). Behavioral factors also contribute to this relationship; children who sleep less have more opportunities for late-night eating and are more likely to engage in emotional or boredom-induced snacking (Hermes et al., 2022). Given these consequences, interventions should prioritize both sleep hygiene and healthy dietary habits, emphasizing consistent sleep schedules, reduced screen time before bed, and balanced nutrition to mitigate the adverse effects of poor sleep on metabolic health. This finding suggests that consuming unhealthy foods may adversely affect sleep duration. In conclusion, consuming nutritious and healthy foods is a critical component that not only impacts physical health but also sleep patterns and overall quality of life.

Limitations of the Research

This study has limitations, notably in terms of the difficulties associated with data collection among individuals with special needs, despite its strengths. The generalizability of the study's findings may be restricted by factors such as the reliability of measurements and participation constraints. This study's sample

was limited to 37 individuals with special needs, which limits its generalizability to this region. Furthermore, the relationship between BMI and other variables was not adequately controlled for a variety of socio-economic and environmental factors, which is another limitation. Another limitation of this study is that, although the survey was designed by the researchers based on a literature review, it was not pilot-tested.. The results should be interpreted with caution, as the data acquisition methods were contingent upon subjective responses. The objective of future research should be to elucidate causal relationships through the use of a more diverse and extensive sample size.

Conclusion

The study concluded that 54.1% of individuals with disabilities had a pre-existing disability, and the prevalence of moderate and severe obesity was relatively low. The findings emphasize the need to improve the sleep duration and eating habits of children with disabilities. Educating and raising awareness among the families of individuals with disabilities about healthy nutrition and associated health risks is essential for preventing obesity. Additionally, the study underscores the importance of improving the quality of care provided during the prenatal period. Increasing investments in prenatal and perinatal health services and ensuring their accessibility to broader populations is of utmost importance.

Moreover, these findings highlight the critical role of community-based interventions in promoting the health and well-being of individuals with disabilities. Public health nurses are key in designing and implementing targeted health promotion programs, particularly those focusing on nutritional education and obesity prevention. By integrating health education into community and family-based care, public health nursing can help mitigate health disparities and improve the overall quality of life for individuals with disabilities. This study helps us better understand the needs of individuals with disabilities concerning health, nutrition, and daily living activities, providing insights for future studies and interventions in this area. Based on these findings, implementing nutritional education programs for individuals with disabilities can facilitate the adoption of healthy eating habits within this population.

Ethical Considerations: This research was approved by Scientific Research and Publication Ethics Committee of Sakarya University of Applied (Date: 11.01.2024 and No: 40/3).

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