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Malaysian Youth's Quality of Life: Looking from the Perspective of Eating Behaviour

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ABSTRACT

The purpose of this study is to identify the relationship between eating behaviour and quality of life among youth in Malaysia. The systematic literature review and thematic content analysis initiated in Scopus, Web of Science, Science Direct, and PubMed published from 2018 to 2022 were reviewed. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards were followed for conducting the systematic review. A set of inclusion and exclusion criteria was used to identify relevant research, and data extraction and analysis were done to investigate the relationships. The study quality was assessed using the "Quality Assessment Tool for Quantitative Studies". The systematic result found 8 studies classified as eligible (cross-sectional) out of 111 articles reviewed which looked at the relationship between eating behaviour and quality of life, while also emphasizing the lack of research that the topic being studied. This study highlighted unhealthy eating behaviour and dietary patterns associated with lower quality of life. Furthermore, the importance of promoting public awareness about eating healthy and nutrition knowledge was highlighted in this study. Information obtained from this research will benefit the individuals, researchers, institutions, and community to advance knowledge and future practice.

Keywords: eating behaviour, quality of life, youth

INTRODUCTION

Youth is the most important stage of life, during this time they opt to be independent, making their own decisions and exposure to different social groups (Powell *et al.* 2019). Arfa & Esther (2019) stated that in Malaysian law, youth is defined as someone aged 15 to 30 years. At the same time this era is where the youth generation faces an increasing health problem due to unhealthy diets and health complications such as obesity, malnutrition, and excessive eating (Zhao *et al.* 2017; Chong *et al.* 2019; Gong *et al.* 2020). Health-related behaviours and emotional habits will also be developed which can lead to long-term health issues such as tobacco and alcohol use (Othman & Essau 2019).

Described by Eiser (2001) quality of life plays a vital role in improving a person's life satisfaction and psychological well-being. The five dimensions of physical well-being, material well-being, social well-being, emotional well-being, and development and activity are frequently used to categorise QoL, which is both subjective and objective (Dimenäs *et al.* 1990). With the emergence of obesity, diabetes and cardiovascular among youth have a damaging impact on quality of life because body perception is disturbed (Jebeile *et al.* 2021). Eventually, this will significantly affect the youth quality of life. Previous study by Kumcağız (2017) mentioned that the physical changes that may develop in teenagers as a result of an eating behaviour pattern that have harm their psychological and consequently their quality of life. Eating behaviour reflect an individual's eating and nutrition concepts, behaviours, and feelings (Sogari *et al.* 2018). It follows that individuals who have developed positive eating behaviour can continue to be healthy and having a healthy eating attitude later will ultimately help an individual's quality of life to rise (Kumcağız 2017). For example, people who ate a high-quality breakfast had a better quality of life and

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were less stressed and depressed than those who ate a low-quality or extremely low-quality meal (Ferrer-Cascales *et al.* 2018; Lanuza *et al.* 2020). On the contrary, consuming Ultra-processed food or fried foods may increase the risk of various diet-related diseases and lower the quality of life in the physical health domain (Monteiro *et al.* 2018; Lanuza *et al.* 2020). Particularly youth that frequently engage in bad eating habits, which promote fast food consumption, improper diets, and limited consumption of fruits, vegetables and dairy products (Kabir *et al.* 2018). Thus, this unhealthy eating behaviour may continue until the university stage when this group of students are vulnerable and encounter various risky behaviours that may negatively impact their quality of life (Ortiz *et al.* 2016).

Youth in Malaysia increasingly facing low quality of life, with poor eating habits playing a significant role. This outcome include obesity, malnutrition and others metabolic disease are all possible effects that diminish their overall quality of life. In conjunction with the WHO's effort to achieve the sustainable development agenda to ensure healthy lives and promote well-being for people as important elements by 2030, this eventually may improve the element of healthcare among communities in Malaysia. Despite increased awareness, many youths continue to engage in unhealthy eating behaviour, indicating a lack of education, behaviour change, and intervention strategies. More research is needed to investigate how improving eating habits can potentially improve the physical, psychological, social, and environmental elements of young people's life. Therefore, this study is needed to better understand the specific relationship between eating behaviour and youth quality of life, and to provide evidence-based insights for targeted programs, policies, and educational interventions.

METHODS

Design, location, and time

This study review systematically recent scientific articles and publications within the last five (5) years. The current study reports systematic reviews following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) criteria.

Material and tools

The databases Web of Sciences, Scopus and PubMed were used to perform a systematic search for the studies that assessed the association between eating habits and Quality of Life (QoL). The chosen papers' bibliographies and "related citations" searches were used as the basis for manual searching. “Youth or young people”, "students", ‘dietary or eating behaviour” and “quality of life”, together with their corresponding synonyms, were the three keyword categories employed in the search. To find the keyword, the three primary Boolean operators are AND, OR, and NOT. This operator will help narrow or widen the search parameters, obtain pertinent studies and omit irrelevant ones. The author used reference management tools like the software Mendeley (Version v2.109.0) to retrieve articles, eliminate duplicates, and filter the articles based on their titles and abstracts before shortlisting them for full-text review.

Procedures

The screened studies required to be published in English between 2019 and 2023, focus on "quality of life" and "eating behaviour" among youth and different diseases, and meet other criteria to be included in the subset of studies for data extraction. Since "quality of life" is a multifaceted concept that is frequently used to refer to a positive general condition rather than an objective result, as is recommended here, the usage of the word "quality of life" is confined to the title throughout the search technique is justified. The studies were considered if they assessed QOL using a reliable questionnaire, such as but not restricted to, WHOQOL, HRQOL, SF-12, SF36 or similar instruments were considered. Eating behaviour data collected through TFEQ, EBPQ food frequency questionnaires and diet history were included in the study.

This review includes studies done in both English and non-English languages to fully examine the body of research on “quality of life” and “eating behaviour” To guarantee a broad and worldwide view of the subject matter, the decision was made to incorporate non-English studies. Thus, it will reduce any potential linguistic and cultural biases that might result from focusing just on English-language literature by taking into account a wide range of studies. Non-English studies are included because they offer

insights from a variety of cultural contexts and enable a more in-depth analysis of characteristics or factors. As significant contributions to the field are not restricted to a single language, it is possible to locate works that have been translated into numerous languages. The following were not included in the search: narrative reviews, papers that were not peer-reviewed, theses, books or chapters, abstracts, and editorials. The analysis may not be as thorough if there are articles with missing data or articles whose full text is unavailable. Articles discussing the creation of an index of a new index derived from an old index to assess "quality of life" and "eating behaviour" across all demographic groups met the inclusion requirements for title, abstract, and full-text screening. On the other hand, the exclusion criteria were nonhuman studies or any clinical studies that were associated with health outcomes. Hence this also excluded any article that did not evaluate food safety related to human accidents or injury, the environmental health and safety of impact on society were not included. The present review does not cover scores for single nutrient quality and nutrient profiling such as protein quality, glycemic load, and index. The study on Anorexia Nervosa (AN), Bulimia Nervosa (BN), and Binge Eating Disorder (BED) are prevalent psychiatric disorders also beyond the scope of this review.

The PICOS criteria outline the parameters for including or excluding studies in a systematic review. Firstly, in terms of Population (P), all demographic groups are considered for inclusion, while studies involving non-human subjects are excluded. Secondly, concerning Intervention (I), studies that assess eating behaviour and quality of life are included, while those that do not evaluate food safety issues or environmental health impacts are excluded. Thirdly, in the absence of a Comparator (C), studies undergoing descriptive systematic reviews are included, with no specific exclusion criteria outlined for this aspect. Fourthly, for Outcomes (O), studies contributing new or updated diet quality indices are included, whereas those utilizing existing indices are excluded. Finally, regarding Study design (S), cross-sectional, case-control, or cohort studies are included, with no specific exclusion criteria mentioned. These criteria serve as guidelines to ensure that studies meeting the defined parameters are incorporated into the review, thus enhancing the reliability and relevance of the synthesized evidence.

Quality and adequacy assessment. The quality of the studies included in the review was assessed using the Newcastle-Ottawa Scale (NOS). Using this assessment tool, it evaluated research-based on the methodological quality and risk of bias in observational studies, such as cohort and case-control studies. Important methodological elements are evaluated by the NOS, such as the selection of study groups, group comparability, and exposure or outcome determination. This thorough assessment aids in the consideration of the study's overall quality by reviewers and researchers.

The NOS uses an easy-to-understand grading system whereby all these components will be rated based on a star rating. This facilitates the interpretation and dissemination of the quality evaluation findings. A greater methodological quality is usually indicated by a higher star grade. Criteria related to study group selection, group comparability, and outcome determination are included in the NOS. Evaluating the possibility of bias in observational research requires consideration of these factors. Any disagreement on the quality assessment can be resolved through discussion from both reviewers and if necessary, appointing a third reviewer for consultation.

The findings indicate the quality of various cross-sectional research studies assessed using the Newcastle-Ottawa Quality Assessment Scale modified for this research design. Overall, most studies received high quality scores, with most scoring 9 out of a possible total score of 9. This suggests that these studies generally met the specified criteria for selection, comparability, and exposure assessment. Specifically, they demonstrated adequate case definitions with independent validation, utilized consecutive or representative case series, employed community controls, and ensured comparability between cases and controls on various factors. Additionally, these studies effectively ascertained exposure using secure records or structured interviews, maintained consistency in exposure assessment methods across cases and controls, and addressed exposure ascertainment among non-respondents in both groups. However, a few studies scored slightly lower, with scores of 7, indicating potential areas for improvement in methodological accuracy. These findings

highlight the overall high quality of the included cross-sectional studies, which enhances confidence in the reliability of their findings and contributes valuable evidence to inform research and decision-making in relevant fields.

Data analysis

Data extraction. When publications were appropriately chosen, data were extracted using a form that asked for the names of the authors, the year the work was published, the study design, the age range, the sample size being investigated, the instruments that were utilised, and the major findings. To confirm the veracity of the data, two researchers examined the extracted data as they had done throughout the selection procedure. To facilitate the study comparisons a flow diagram was designed including the standardised information extracted from all the articles. Figure 1 below shows the flow diagram illustrating the identification, screening, and selection procedure for included publications provided by Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).

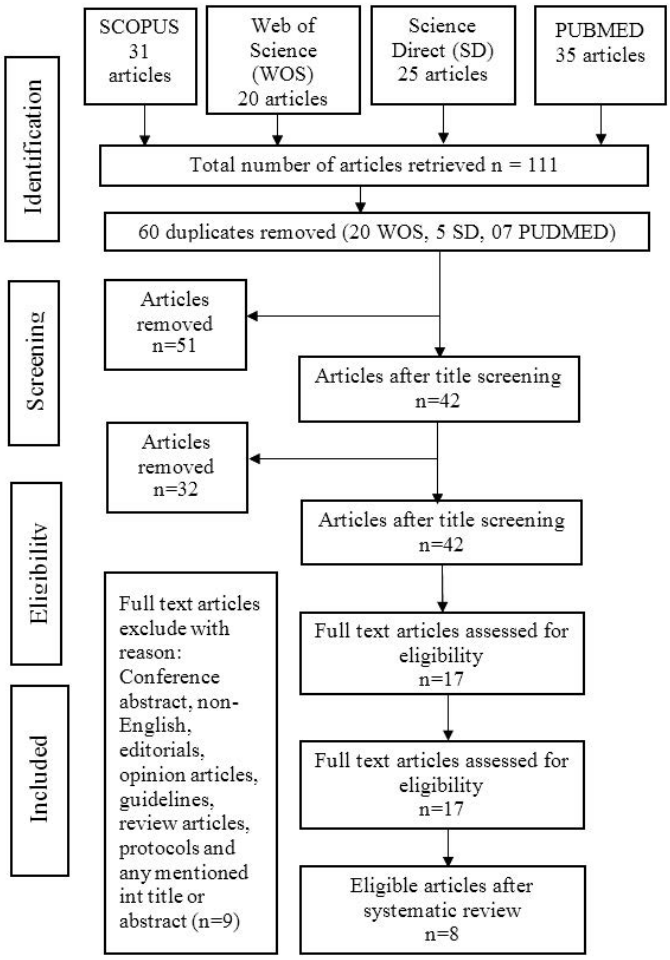
Screening of articles. Titles and abstracts were searched using electronic searches and were downloaded. Each of the articles is copied in Microsoft Excel and Mendeley Referencing Manager to make it easier to remove duplicated articles. After this initial screening, the 2 researchers individually read all the selected publications to agree on the final list of articles to be included in the review. The researchers also assessed the cited references in the selected studies, to identify other articles of potential interest for inclusion in the review. Any disagreements during the selection period were resolved through discussion with 2 additional researchers, who independently reviewed the disputed articles. To find further citations that might not have been found during the first database searches, manually check the reference lists of the included studies, review papers, and pertinent literature reviews once the searches have been completed. If a study's missing data is connected to an important variable or the outcome of interest, excluding it could lead to selection bias. If studies with incomplete data typically present smaller effect sizes or null findings, the review's conclusions could be biased in favour of overestimating the actual impact of the exposure or intervention.

RESULTS AND DISCUSSION

Based on Figure 1 the flow diagram detailing the PRISMA systematic review method supplied, the investigation found 111 publications in the scholarly literature then after reviewing the titles and abstracts besides excluding duplicated articles, 51 articles were reviewed, of which only 8 were determined to be suitable after reading the complete texts and applying the inclusion criteria. To date, a systematic review has been conducted to evaluate the association between eating behaviours and quality of life in youth. It is revealed that quality of life was commonly adversely related to eating behaviour such as emotional eating.

From the screening process, a few articles have found four of the selected publications assessed students or youth from various fields of study and have found that healthy eating behaviour improves the quality of life for young people. As well as, having breakfast and dining at home-cooked meals will impact daily food intake (Lanuza *et al.* 2020). Another study also indicates this eating patterns such as low-fat eating, emotional eating and a cultural way of life will impact one's physical and psychological health and may lead to lower life satisfaction (Ijaz & Rehman 2023). The nutritional value of a person's diet is strongly impacted by their eating habits. Foods high in nutrients supply vital minerals, vitamins, and other nutrients needed for optimum mental and physical health. Furthermore, lack of nutrients and general health impairments will contribute to poor dietary choices such as consuming excessively processed food that has high sugar, salt and fat intakes.

Based on Table 1 shows that these studies will involve young people who usually have a relationship between unhealthy food and a lower level of quality of life. It is found that the youth age range is more common toward unhealthy eating behaviour, sedentary lifestyle and ignorance of eating behaviours which have led to a lower quality of life in various aspects (Fondevila-Gascón *et al.* 2022). This detail is described in Table 1 which displays the author (year), design, age, sample size, instruments/ outcome, and key results that were gathered and summarised from the selected papers. Four of the studies were conducted in European countries 3 from the Middle East and one from Korea. The lowest sample size is a cross-sectional study with



Flowchart of articles selected on the systematic review. Articles were excluded mainly because: 1) the study presents unsuitability in the proposed outcomes (i.e. not address quality of life and eating behaviour jointly); 2) the study population does not meet the proposed criteria ((i.e.does not include youth age range); 3) full text with incomplete information or unavailable.

Figure 1. Preferred reporting items for systematic peviews and meta-analyses (PRISMA)

50 adult women, five studies with <500 sample size and two studies with >1,000 respondents.

The research assessed the relationship between eating habits and QoL in young people using a priori dietary indexing methods, empirical methodologies, or both. Through the research done, it is found that most of the young age population faces a concerning problem due to unhealthy eating habits. The main 8-article study on this population uses different types of instruments to measure the prevalence of eating behaviours. This study, ten instruments total have been identified, of which six (6) different types are used to measure eating behaviour (i.e. Three-Factor Eating Questionnaire, Food Habits Survey, Dutch Eating Behaviours Questionnaire, Eating Behaviour Pattern Questionnaire, Night Eating Habits and Dietary Factors and Eating Disorder Examination Questionnaire). There are four (4) instruments used in total for evaluating health and quality of life (i.e. WHOQOL-BREF, Quality of Life Questionnaire, Health-Related Quality of Life and Short Form Health Survey).

In a study emotional eating and burnout can both reduce one's quality of life, the emotional eating score shows a positive link with emotional fatigue (Özcan *et al.* 2021). Higher psychological distress was linked to more emotional eating and lower health-related quality of life. Emotional and mental well-being can be negatively impacted by

Table 2. Changes in body weight and dietary intakes within and between groups

Author (Year)	Design	Age (Sampe size)	Instrument	Results	Study quality[1]
Berino *et al.* (2002)	Cross-sectional	18–59 years (50)	TFEQ SFHS	Emotional eating was the most present eating behaviour, and it was also the highest score (p=0.047). QOL the lowest domains of pain and vitality (p<0.0001)	Moderate
Lanuza *et al.* (2020)	Cross-sectional	18–24 years (1,212)	FHS WHOQOL-BREF	Healthy eating habits had a higher QOL in all domains (p<0.05)	Strong
Özcan *et al.* (2021)	Cross-sectional	18 years above (194)	DEBQ QoLQ – SF36	The emotional eating score has positive relationships with emotional burnout depersonalization and has a negative relationship with personal success (p≥0.05)	Moderate
Ijaz & Rehman (2023)	Cross-sectional	18–35 years (385)	EBPQ WHOQOL- BREF	Healthy eating habits among young individuals will improve their quality of life. Significant effect of family income on both the eating behaviour pattern F (2, 382)=3.70 and QOL, F (2,382)=8.87, p<0.05	Strong
Kim *et al.* (2002)	Cross-sectional	19–29 years (129)	NEHDF HRQoL	The HRQoL deteriorated when the night meal intake was high in females HRQoL 2.88 (±1.13)	Moderate
Baceviciene *et al.* (2020)	Cross-sectional	21.6±5.0 years (1,850)	(EDE-Q 6.0) WHOQOL-BREF	The positive trait of body area satisfaction was associated with the significantly enhanced QoL in all domains in both genders (for men β=0.29–0.34; for women β=0.26–0.33; p<0.001).	Moderate
Foppa *et al.* (2021)	Cross-sectional	Average 45 years old (68)	TFEQ WHOQOL- BREF	The general quality of life was 57.03 points and the eating habit with the highest score was cognitive restraint (61.11 points)	Moderate
Dalbudak *et al.* (2020)	Cross-sectional	1–48 years (205)	TFEQ WHOQOL- BREF	Significant relationship intensive and a positive way between individuals' quality of life and their nutrition habits (p<0.05)	Moderate

QOL: Quality of Life; WHOQOL-BREF: World Health Organization Quality of Life BREF; DEBQ: Dutch Eating Behaviors Questionnaire (16); TFEQ: Three-factor Eating Questionnaire; EDE-Q 6.0: Eating Disorder Examination Questionnaire 6.0; EBPQ: Eating Behaviour Pattern Questionnaire; HRQoL: Health-Related Quality of Life; NEHDF: Night Eating Habits and Dietary Factors; QoLQ – SF36: Quality of Life Questionnaire - Short Form (SF- 36); SFHS: Short Form Health Survey; FHS: Food Habits Survey

obesity and bad eating habits. People who struggle with their weight or have disordered eating habits can be socially isolated, depressed, anxious, and have a poor perception of their bodies. Especially among females, it is stated that negative emotions are related to severe depression symptoms, which enhance emotional eating behaviours (Oh & Kim 2023). On the other hand, a study done during covid-19 pandemic in Southern Brazil stated that during the pandemic, there was no significant difference in the quality of life and eating behaviour of obese persons. However, when Emotional Eating (EE) and Uncontrolled Eating (UE) become more prevalent this has significantly shown a decline in the quality of life among the youth (Foppa *et al.* 2021). The previous study also revealed that students who have unhealthy eating behaviour patterns and have excess weight are associated with decrement in quality of life, as reported, 60% of students had weight regain ($p \leq 0.05$), with a mean weight regain of 23.3% while, the most common trend (p=0.047) was emotional eating (Berino *et al.* 2022). Furthermore, A greater risk of heart disease, type 2 diabetes, certain malignancies, joint difficulties, and respiratory problems is linked to being overweight. Eventually, if prolonged, this can potentially cause serious impairment of physical abilities, and limit mobility which can lower the quality of life.

Finally, in evaluating university students, it was observed that body image concerns in both genders (p<0.001) experienced a significantly improved quality of life. In addition, mental health can be greatly impacted by body image issues, such as obsession with perceived defects or dissatisfaction with one's looks. Depression, anxiety, social disengagement, and low self-esteem can all result from these worries which

will lead to disordered eating, poor psychological and lower quality of life category mainly in women (Baceviciene *et al.* 2020). However, a study found a significant relationship between nutrition habits that can positively affect students' quality of life if the student is equipped with lessons in healthy life and nutrition (Dalbudak *et al.* 2020). Interventions targeting body image concerns can lead to significant improvements in quality of life across various areas such as body-positive therapies, mindfulness-based methods, cognitive-behavioural therapy, acceptance and commitment therapy, and support groups.

The COVID-19 pandemic has caused a lot of people to stay at home, after extended periods of movement control orders were implemented by governments starting in March 2020, people are looking for outdoor activities they believe will improve their physical and mental health (Nordin & Jamal 2021). Indeed, participating in outdoor activities is a well-liked and successful strategy for helping people enhance their mental and physical well-being. Over the past decade, morbidity due to unhealthy food has become increasingly popular throughout the world. It can be concluded that many researchers have looked into improving quality of life by eating healthy (Kafatos *et al.* 2000; Mamplekou *et al.* 2010; Abbasalizad-Farhangi *et al.* 2018; Lanuza *et al.* 2020) and by gaining nutrition knowledge increased focus on prevention of cognitive issues and brain development (Wattick *et al.* 2018; Scazzocchio *et al.* 2021). Previous research has established that because our sense of self, social connections and psychological well-being are all impacted by our food consumption, what we eat will affect our quality of life (Lin *et al.* 2012). Malaysian way of living and consuming food excessively while listed as the most obese citizen in Southeast Asia has been concerning (Chong *et al.* 2019). Youth eating habits and quality of life are significantly influenced by cultural and socioeconomic variables. While foods that are considered desirable or acceptable in a given group or society are determined by cultural norms and customs. For instance, during religious or cultural festivities, some foods may have symbolic or ceremonial meanings in particular cultures. Other than that, each family household also influences the cultural norms such as portion sizes, meal timings, and food preparation methods. Youth will be influenced by their food preferences and eating habits, which may lead to variations in the amount of nutrients they consume and the general health results. This led to the government's intervention in providing support and encouraging people to be active and to have a healthier lifestyle. Many Malaysians are now aware of the importance of quality of life and gradually adopted practising a healthy eating pattern. By providing comprehensive education about the importance of nutrition and its impact on overall health and well-being. The importance of this subject needs to be integrated from an early age by promoting the consumption of a range of nutrient-dense foods, such as fruits, vegetables, whole grains, lean meats, and healthy fats, to help teenagers form healthy eating habits. Stress the value of eating in moderation, eating regularly, and practising mindful eating.

This paper reviews the literature on the quality of life and eating behaviour among youth which is relevant to current studies. Research gaps and direction for future empirical research should include (a) quality of life, eating behaviour, and nutrition knowledge as indicators of a youth's level of satisfaction with quality of life. Several tools offer to analyse how it could affect how the relationship between eating patterns and quality of life is understood. Examples: The SF-36 Health Survey, EuroQol-5D (EQ-5D), and WHOQoL-BREF whereby these tools evaluate many aspects of Quality of Life (QoL), such as general life satisfaction, social functioning, and mental and physical health. Other than that Food Frequency Questionnaires (FFQs) and Dietary Assessment Tools are used to assess dietary intake, dietary preferences and eating habits as opposed to QoL specifically. Nonetheless, they can offer useful information for examining the relationship between eating patterns and quality of life. To obtain a more thorough understanding, a conclusive framework (Lanuza *et al.* 2020) that considers the demand side of the quality-of-life model must be proposed. The data on youth profiles, such as demographics and the youth's psychological well-being can be an advantage to produce better offerings into the board of knowledge.

CONCLUSION

In conclusion, this systematic review result found a positive relationship between healthy

eating behaviour with quality-of-life aspects. Unhealthy dietary habits as seen in impairment in many aspects of physical and mental health. It was also mentioned that issues such as lack of nutrition, psychological health, and depression might amplify this unfavourable link and lead to a worsening quality of life even further. One limitation that can be considered to be improved for future study is the methodology due to most of the study is self-reported data, which can be prone to biases and is used in many studies in this field. More objective measurements, such as biomarkers or clinical evaluations, might be used in future studies to provide more precise information on food preferences, mental health outcomes, and quality of life. In addition, longitudinal studies between nutrition, mental health, and quality of life are needed to better understand the relationship between dietary patterns and mental health.

It is pointed out, that a limited number of studies that address the mentioned concerns combined eating behaviour and quality of life among youth as well as little amount of studies coverage. This review offers a thorough understanding of how the areas of nutrition, mental health, and quality of life overlap and influence one another by looking at research from these fields. This study also recognizes that people from different origins may have varied food habits, mental health needs, and quality of life outcomes. Therefore, this study has significant implications for intervention and policy creation since it synthesizes the research on the connections between nutrition, mental health, and quality of life hence having the capacity to promote holistic health and well-being and meet the diverse needs of individuals more effectively.

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DECLARATION OF CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest.

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