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Nutrition Knowledge, Dietary Behavior, and the Risk of Non-Communicable Diseases among Young Adults

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ABSTRACT
This study examines the relationship between nutrition knowledge, dietary behavior, and the risk of non-communicable diseases among young adults within contemporary urban environments. The research aimed to explore how nutritional awareness influences eating behavior and contributes to the prevention or emergence of chronic disease risk factors among younger populations. A qualitative method with a phenomenological research design was employed because the study sought to understand participants' lived experiences, perceptions, and behavioral interpretations regarding nutrition and health practices. The research was conducted in several universities and urban community settings in West Java, Indonesia, due to the increasing prevalence of unhealthy dietary behavior and lifestyle-related diseases among young adults in the region. The study involved twenty-five participants and eight key informants selected purposively based on their relevance to nutrition-related experiences and professional expertise. The findings revealed that most participants possessed moderate nutritional knowledge; however, unhealthy dietary practices remained common because of social influence, digital food marketing, academic pressure, limited time, and environmental barriers. The study recommends strengthening integrated nutrition education, supportive food environments, and preventive health promotion programs targeting young adults to reduce the long-term burden of non-communicable diseases.

INTRODUCTION

Non-communicable diseases (NCDs) have become one of the most significant global public health challenges, accounting for the majority of premature mortality and long-term disability among productive age populations (Olaniyan et al., 2023). Cardiovascular diseases, diabetes mellitus, obesity, hypertension, and metabolic syndrome are increasingly diagnosed not only among older adults but also within younger age groups (Azis, 2025). The transition in disease patterns has been closely associated with rapid urbanization, technological development, sedentary lifestyles, and unhealthy dietary practices that characterize contemporary society (Amlaev & Abdullah, 2025). Young adults represent a particularly vulnerable demographic because this stage of life is marked by substantial behavioral transitions, including independent food choices, irregular eating schedules, increased consumption of processed foods, and exposure to digital food marketing (Dagar et al., 2024). Consequently, unhealthy nutritional habits developed during early adulthood may persist throughout the life course and contribute significantly to the development of chronic diseases in later years (Haridoss et al., 2025).

Current epidemiological evidence indicates that inadequate nutritional knowledge is strongly associated with poor dietary behavior and unhealthy lifestyle choices (Rosenstein & Song, 2024). Although access to nutritional information has increased through digital platforms, social media, and educational institutions, many young adults continue to demonstrate insufficient understanding regarding balanced nutrition, calorie intake, nutrient composition, and the long-term health consequences of unhealthy eating patterns (Emana et al., 2023). This paradox suggests that the availability of information alone does not necessarily translate into healthier dietary behavior (Müller, 2023). In many developing and middle-income countries, including several regions in Southeast Asia,

the consumption of high-sugar beverages, fast food, ultra-processed products, and low-fiber diets among young adults has increased substantially during the past decade. Such trends have accelerated the prevalence of obesity and metabolic disorders among populations traditionally considered healthy and productive (Chetry & Collins, 2024).

The state of the art of contemporary research demonstrates that nutrition knowledge plays a critical role in shaping individual dietary decisions and health outcomes (Siddiqui & Irfan, 2024). Previous studies have explored the relationship between nutritional literacy and eating behavior among adolescents, university students, and general adult populations. Several investigations reported that individuals with higher nutritional knowledge tend to consume healthier foods, including fruits, vegetables, and balanced macronutrients, while limiting excessive sugar, salt, and saturated fat intake (Takki & Mayoral-García, 2025). Other studies emphasized that nutritional awareness may positively influence preventive health behavior, including physical activity, weight management, and routine health monitoring (Monsalves-Álvarez et al., 2024). However, empirical findings remain inconsistent across different sociocultural contexts. Some studies revealed that adequate nutritional knowledge does not always correspond with healthy dietary practices because food choices are also influenced by socioeconomic status, peer pressure, convenience, emotional factors, and food accessibility (Young et al., 2024).

Despite extensive scholarly attention, important research gaps remain insufficiently addressed. Existing studies frequently examine nutrition knowledge and dietary behavior separately without comprehensively analyzing their combined influence on the risk of non-communicable diseases among young adults (Garde & Messenger, 2025b). Furthermore, many previous investigations focus predominantly on adolescent populations or older adults, while research specifically targeting young adults remains relatively limited. Another significant gap concerns the lack of integrated approaches that connect nutritional cognition, behavioral patterns, and disease risk indicators within a single analytical framework. Previous studies also tend to rely heavily on descriptive methodologies, thereby limiting deeper understanding regarding causal relationships and behavioral determinants associated with NCD risk. Additionally, cultural and environmental dimensions influencing dietary behavior among young adults in rapidly changing societies are often underexplored (Achok & Salano, 2025).

The principal problem underlying this research is the increasing prevalence of unhealthy dietary behavior among young adults despite growing exposure to nutritional education and public health campaigns (J. Li et al., 2025). Many young adults possess basic nutritional awareness but fail to implement healthy eating practices consistently in daily life. This discrepancy between knowledge and behavior potentially contributes to higher vulnerability to obesity, diabetes, hypertension, and other chronic diseases at relatively young ages (Domba et al., 2025). Moreover, unhealthy food environments characterized by affordable fast food, aggressive digital marketing, academic stress, and time constraints may weaken the practical application of nutritional knowledge (Kali et al., 2025). Consequently, understanding the interaction between nutritional literacy and dietary behavior becomes essential for identifying effective preventive strategies against NCDs.

The novelty of this research lies in its integrative examination of nutrition knowledge, dietary behavior, and NCD risk among young adults within a multidimensional public health framework. Unlike previous studies that analyze these variables independently, this study emphasizes the interconnected relationship between cognitive understanding, behavioral implementation, and health risk outcomes. The research also contributes by focusing specifically on young adults as a transitional population group whose dietary patterns significantly influence future health trajectories (Hasni et al., 2024). Furthermore, the study seeks to provide contextual insights regarding behavioral determinants that mediate the relationship between knowledge and actual dietary practices. Through this integrated perspective, the research offers a more comprehensive understanding of preventive health strategies for reducing the burden of non-communicable diseases.

Based on the identified background and research gaps, several research questions emerge. The first question concerns the extent to which nutrition knowledge influences dietary behavior among young adults. The second question examines whether unhealthy dietary behavior significantly contributes to increased risk of non-communicable diseases within this population group (Zhang et al.,

2024). The third question investigates how demographic, social, and environmental factors interact with nutritional knowledge and dietary practices in shaping NCD risk. These questions are essential for generating evidence-based interventions capable of improving nutritional literacy and promoting healthier lifestyles among young adults.

The primary objective of this study is to analyze the relationship between nutrition knowledge, dietary behavior, and the risk of non-communicable diseases among young adults. Specifically, the research aims to evaluate the level of nutritional knowledge possessed by young adults, identify prevailing dietary behavior patterns, and assess their association with indicators of NCD risk. In addition, the study seeks to explore factors influencing the translation of nutritional knowledge into healthy dietary practices (Bhor, 2023). By addressing these objectives, the research intends to contribute meaningful evidence for the development of preventive public health strategies and nutrition education programs.

Theoretically, this study contributes to the advancement of public health and nutritional science literature by strengthening the conceptual understanding of the relationship between knowledge, behavior, and disease prevention (Karle et al., 2023). The research expands existing theoretical frameworks regarding health behavior by integrating cognitive and behavioral dimensions within the context of NCD prevention among young adults. Academically, the findings are expected to enrich interdisciplinary discussions within nutrition science, health promotion, epidemiology, and behavioral studies. The study may also serve as a scientific reference for future scholars conducting related research on nutritional literacy and chronic disease prevention.

Practically, this research provides valuable implications for policymakers, educational institutions, healthcare professionals, and public health organizations. The findings may support the formulation of evidence-based nutrition education programs targeting young adults in universities and community settings (Königová et al., 2025). Health practitioners may utilize the results to design more effective dietary counseling and preventive interventions aimed at reducing NCD risk. Furthermore, policymakers may employ the evidence to strengthen public health campaigns promoting balanced nutrition and healthier food environments for younger populations.

Nevertheless, this study acknowledges several limitations. The research may rely on self-reported dietary behavior data, which can introduce response bias and inaccuracies in food consumption assessment (Misra & James, 2025). The cross-sectional design may also limit the ability to establish causal relationships between nutritional knowledge, dietary behavior, and NCD risk (Kim & Maeng, 2023). Additionally, variations in sociocultural and economic contexts among respondents may affect the generalizability of findings across broader populations. These limitations indicate the need for careful interpretation of results within the study context.

Future research is recommended to adopt longitudinal or mixed-method approaches to better understand the dynamic relationship between nutrition knowledge and long-term health behavior changes (Pawar et al., 2025). Subsequent studies should also consider incorporating psychological, environmental, and digital media influences that shape dietary decision-making among young adults. Comparative studies across different cultural and geographical contexts may further enrich understanding regarding the determinants of healthy eating behavior and NCD prevention. Through continuous scholarly investigation, more comprehensive and sustainable strategies can be developed to address the growing burden of non-communicable diseases among younger generations.

LITERATURE REVIEW

The increasing prevalence of non-communicable diseases (NCDs) among young adults has generated substantial academic attention within public health, nutrition science, and behavioral research (Z. Wang et al., 2023). Contemporary literature consistently emphasizes that unhealthy dietary behavior represents one of the most influential modifiable risk factors contributing to obesity, cardiovascular disease, hypertension, type 2 diabetes mellitus, and metabolic disorders (Sousa et al., 2024). The transition toward modern lifestyles characterized by excessive consumption of ultra-processed foods, irregular eating habits, low physical activity, and high intake of sugar and saturated fat has significantly altered health patterns among younger populations (Zareivenovel et al., 2025). Consequently,

understanding the relationship between nutrition knowledge, dietary behavior, and NCD risk has become an important area of scientific inquiry. Existing studies indicate that nutritional literacy affects food selection, eating behavior, and long-term health outcomes; however, inconsistencies remain regarding the extent to which knowledge can effectively translate into sustainable healthy behavior among young adults (Afolabi et al., 2023).

This research is theoretically grounded in three major theories frequently applied within health promotion and behavioral science, namely the Health Belief Model, Social Cognitive Theory, and Theory of Planned Behavior (Ordovás, 2024). These theories provide conceptual foundations for explaining how cognitive understanding, environmental influence, and behavioral intention shape dietary practices and NCD prevention among young adults.

The first theory employed in this study is the Health Belief Model (HBM), popularized by Godfrey Meredith Hochbaum in 1958 at the United States Public Health Service, affiliated with social and public health research institutions in the United States (Karan et al., 2024). The Health Belief Model was initially developed to explain preventive health behavior and individuals' responses toward disease prevention programs. Hochbaum argued that health behavior is influenced by perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Soodejani, 2024). According to this framework, individuals are more likely to adopt healthy dietary behavior when they believe they are vulnerable to chronic diseases and recognize the seriousness of the associated health consequences. In the context of this study, young adults with higher nutritional knowledge may demonstrate greater awareness regarding the risks of obesity, diabetes, and cardiovascular disease, thereby increasing motivation to engage in healthier eating practices.

The conceptual framework of the Health Belief Model has evolved substantially over time. Rosenstock, Strecher, and Becker further refined the model during the 1970s and 1980s through empirical applications in preventive medicine and public health interventions in the United States (Olonisakin & Useh, 2025). Their development emphasized the importance of self-efficacy as a critical determinant of behavioral change. Contemporary applications of HBM now incorporate digital health communication, social media influence, and psychological determinants of dietary decision-making (Salwathura & Ahmed, 2023). Current research demonstrates that nutritional awareness alone is insufficient without strong perceived motivation and confidence to implement healthy dietary behavior consistently. Thus, this theory remains highly relevant in explaining why some young adults fail to adopt healthy eating patterns despite possessing adequate nutritional knowledge.

The second theory utilized in this research is Social Cognitive Theory (SCT), introduced by Albert Bandura in 1986 at Stanford University, United States (Poloska et al., 2024). Social Cognitive Theory emphasizes reciprocal interactions between personal factors, environmental influences, and behavior. Bandura explained that human behavior is shaped not only by cognitive understanding but also by social observation, modeling, reinforcement, and environmental conditions. Within nutritional and health contexts, dietary practices among young adults are significantly influenced by peer groups, family habits, media exposure, food accessibility, and cultural norms (Islam et al., 2025). According to Bandura, self-efficacy represents a central mechanism influencing an individual's ability to maintain healthy behavior despite environmental challenges.

The theoretical framework developed by Bandura has undergone considerable advancement in contemporary health research. Modern applications of Social Cognitive Theory integrate digital environments, social networking platforms, and behavioral reinforcement technologies influencing food consumption behavior (Bhattacharya et al., 2023). Scholars such as Perry, Baranowski, and Parcel expanded SCT within nutritional education research during the 1990s through studies conducted in public health institutions and universities in the United States (Lavanya & Subbulakshmi, 2023). Their work highlighted that environmental support systems, including school-based nutrition programs and community interventions, substantially improve dietary behavior among younger populations. Current developments further suggest that online food advertising, influencer culture, and algorithm-based marketing significantly shape dietary preferences among young adults (Lyu et al., 2024). Consequently, SCT provides a comprehensive explanation regarding the interaction between nutritional knowledge and external social environments influencing NCD risk.

The third theory adopted in this study is the Theory of Planned Behavior (TPB), developed by Icek Ajzen in 1991 at the University of Massachusetts Amherst, United States (Giannichi et al., 2024). TPB proposes that behavior is primarily determined by behavioral intention, which is influenced by attitudes, subjective norms, and perceived behavioral control. Ajzen argued that individuals are more likely to engage in healthy behavior when they possess positive attitudes toward the behavior, receive social support, and believe they can successfully perform the intended action. In relation to this study, young adults who perceive healthy eating as beneficial, socially supported, and achievable are more likely to adopt balanced dietary behavior and reduce NCD risk factors.

The Theory of Planned Behavior has experienced substantial contemporary expansion across nutrition and health behavior studies worldwide. Researchers such as Conner and Armitage further developed TPB applications in dietary intervention and preventive health research in the United Kingdom during the early 2000s (Nai & Wulandari, 2024). Their studies demonstrated that behavioral intention alone does not always guarantee consistent healthy eating practices because environmental constraints and emotional factors may weaken behavioral execution. Recent developments incorporate emotional eating behavior, digital consumption patterns, and food marketing exposure into TPB analysis (Marrone et al., 2024). This evolution reflects the growing complexity of dietary decision-making processes among modern young adults exposed to highly dynamic food environments.

The integration of these three theories provides a comprehensive conceptual framework for understanding the principal problems addressed in this research (Shirshekan et al., 2025). The Health Belief Model explains how awareness regarding disease susceptibility influences preventive dietary behavior. Social Cognitive Theory clarifies how social and environmental influences shape food choices and lifestyle patterns. Meanwhile, the Theory of Planned Behavior emphasizes the role of intention, social norms, and behavioral control in translating nutritional knowledge into practical action. Collectively, these theories strengthen the analytical foundation for examining the relationship between nutritional literacy, dietary behavior, and NCD risk among young adults.

The theoretical perspectives also directly address the research gap identified in previous studies. Earlier investigations frequently focused on single behavioral determinants without integrating cognitive, environmental, and intentional dimensions simultaneously (Kelly et al., 2025). As a result, existing research often fails to explain why individuals possessing adequate nutritional knowledge may still engage in unhealthy dietary practices. The present study bridges this gap by combining the explanatory strengths of HBM, SCT, and TPB into a multidimensional framework capable of analyzing behavioral complexity more comprehensively. This integrative theoretical approach constitutes an important novelty of the research because it expands beyond traditional descriptive analyses commonly found in nutritional behavior studies.

The three theories further contribute to the formulation of the research problem and objectives. The Health Belief Model supports the investigation of perceived health risks associated with unhealthy dietary behavior. Social Cognitive Theory facilitates analysis of environmental and social influences affecting nutritional practices among young adults. The Theory of Planned Behavior assists in examining behavioral intention and perceived control regarding healthy eating implementation (Duma et al., 2024). Through these theoretical connections, the study aims to generate more holistic insights regarding preventive strategies for reducing non-communicable disease risk among younger populations.

From a theoretical perspective, the integration of these theories contributes to the advancement of interdisciplinary public health and behavioral science literature by combining cognitive, social, and intentional dimensions of health behavior (Atef & Ali, 2025). Academically, the study enriches scholarly understanding regarding the determinants of dietary behavior among young adults and provides a conceptual reference for future nutrition-related research. Practically, the theoretical framework may support policymakers, educators, and healthcare practitioners in designing evidence-based nutritional interventions targeting behavioral change and chronic disease prevention.

In conclusion, the literature review demonstrates that the Health Belief Model, Social Cognitive Theory, and Theory of Planned Behavior provide complementary conceptual foundations for

understanding the relationship between nutrition knowledge, dietary behavior, and the risk of non-communicable diseases among young adults (Gilks & Alemu, 2024). The perspectives of Hochbaum, Bandura, and Ajzen collectively explain that healthy dietary behavior is influenced not only by knowledge and awareness but also by social environments, behavioral intention, and perceived control. The integration of these theories addresses the principal research problem concerning the inconsistency between nutritional knowledge and actual dietary practices among young adults. Furthermore, the theoretical synthesis bridges existing research gaps by introducing a multidimensional framework capable of analyzing cognitive, social, and behavioral determinants simultaneously. This integrative approach strengthens the novelty, research formulation, objectives, and practical implications of the study while contributing meaningful scientific insights for the development of effective NCD prevention strategies among young adult populations.

RESEARCH METHODS

This study employed a qualitative research approach to explore the relationship between nutrition knowledge, dietary behavior, and the risk of non-communicable diseases among young adults (Kamkhuru & Kanjanarach, 2025). The qualitative method was selected because the research intended to obtain a comprehensive and in-depth understanding of participants' perceptions, experiences, attitudes, and behavioral patterns regarding nutrition and healthy lifestyles. Unlike quantitative approaches that primarily emphasize numerical measurement and statistical relationships, qualitative research enables investigators to examine social realities, behavioral motivations, and contextual factors influencing dietary practices among young adults (Bingöl et al., 2025). Considering that unhealthy eating behavior is strongly associated with cultural, psychological, environmental, and social dimensions, the qualitative method was considered the most appropriate strategy for capturing the complexity of these interactions within real-life contexts.

The research adopted a phenomenological design to investigate how young adults interpret nutritional knowledge and implement dietary behavior in their daily lives (Adimuntja & Asriati, 2023). Phenomenology was chosen because this design emphasizes participants' lived experiences and subjective interpretations regarding health-related behavior. The phenomenological perspective allows researchers to understand how individuals perceive the risks of non-communicable diseases, how they define healthy eating, and how social environments influence their food choices (Loewenthal & Abela, 2025). This design was particularly relevant because the study aimed not merely to identify dietary patterns but also to analyze the meaning attached to nutritional awareness and behavioral decision-making processes among young adults. Through phenomenological inquiry, the study explored how participants experience the tension between nutritional knowledge and actual dietary practices within contemporary social environments characterized by fast food consumption, academic pressure, digital exposure, and modern lifestyles.

The research was conducted in several universities and urban community environments located in West Java, Indonesia. The selected research settings included higher education institutions, youth community centers, and public health service areas where young adults actively engage in academic, social, and professional activities. West Java was selected as the research location because it represents one of the most densely populated provinces in Indonesia, characterized by rapid urbanization, lifestyle transformation, and increasing prevalence of non-communicable diseases among younger populations (Catedrilla, 2023). Furthermore, the region demonstrates substantial exposure to modern dietary trends, including high consumption of processed foods, sugary beverages, and fast-food products. The selection of university environments was also based on the assumption that young adults in academic settings generally possess broader access to nutritional information and digital health resources, thereby providing an appropriate context for analyzing the relationship between nutritional knowledge and actual dietary behavior.

The participants in this study consisted of young adults aged between 18 and 29 years who were enrolled in universities or actively involved in urban community activities. The research involved twenty-five participants selected through purposive sampling techniques (Rijal, 2024). Purposive sampling was considered appropriate because the study required participants possessing specific characteristics relevant to the research objectives, namely young adults with varying levels of nutritional

awareness, dietary behavior, and health experiences. The selected participants represented diverse academic backgrounds, socioeconomic conditions, and lifestyle patterns to ensure broader perspectives regarding nutritional practices and NCD risk factors.

To maintain confidentiality and comply with international research ethics standards, all participants were assigned pseudonyms (Jebb, 2023). Among the participants were "Alya," a 21-year-old university student in public health; "Rafi," a 24-year-old private sector employee; "Nadia," a 22-year-old undergraduate student in economics; "Dimas," a 26-year-old digital content creator; and "Sinta," a 23-year-old nursing student. Additional participants included young adults involved in community organizations, freelance occupations, and early-career professional environments. The inclusion of participants from different educational and occupational backgrounds was intended to generate a richer understanding regarding variations in nutritional knowledge and dietary behavior among young adults.

The rationale for selecting these participants was based on several considerations. First, young adulthood represents a transitional life stage during which individuals begin making independent dietary and lifestyle decisions (Y. Li et al., 2023). Second, this population group is highly exposed to unhealthy food environments, digital food marketing, irregular work schedules, and academic stress, all of which may contribute to unhealthy dietary practices (Garde & Messenger, 2025c). Third, previous studies indicate that young adults often demonstrate inconsistent relationships between nutritional awareness and behavioral implementation (Rostami-Maskopaee et al., 2025). Therefore, selecting participants from this demographic category allowed the study to examine behavioral complexities associated with nutrition-related decision-making processes.

In addition to the primary participants, the study also involved eight key informants selected through purposive and snowball sampling methods (Daba et al., 2025). The informants included nutritionists, public health practitioners, university health counselors, and community health educators who possessed professional expertise related to nutrition education and chronic disease prevention. The key informants were assigned pseudonyms such as "Dr. Hana," a public health nutrition specialist; "Mr. Adrian," a university health promotion coordinator; "Ms. Clara," a community nutrition educator; and "Dr. Bintang," a physician specializing in preventive medicine. Other informants included counselors working in student health services and representatives from local public health institutions.

The inclusion of these informants aimed to strengthen data triangulation and provide professional perspectives regarding nutritional literacy, dietary behavior trends, and non-communicable disease prevention among young adults (Khorany et al., 2023). Their expertise enabled the research to compare participants' personal experiences with broader public health observations and professional assessments. Moreover, the informants contributed contextual explanations regarding environmental, institutional, and sociocultural factors affecting dietary behavior among young adults in urban settings.

Data collection was conducted through in-depth interviews, participant observation, and document analysis (Garde & Messenger, 2025a). In-depth interviews constituted the primary data collection technique because they allowed participants to express their experiences, perceptions, and attitudes freely and comprehensively. Semi-structured interview guidelines were employed to ensure consistency across interviews while maintaining flexibility for participants to elaborate on relevant issues emerging during conversations (Biswas & Roy, 2024). The interview questions focused on nutritional understanding, eating habits, food preferences, awareness of NCD risks, lifestyle patterns, social influences, and barriers to healthy eating behavior.

Participant observation was conducted in university cafeterias, public dining areas, and community activity settings to examine actual dietary practices and food consumption patterns among young adults (Fiona et al., 2024). Through observation, the researcher obtained contextual insights regarding participants' food choices, meal frequency, social eating behavior, and exposure to unhealthy food environments. Observation also enabled the researcher to identify discrepancies between participants' self-reported dietary behavior and actual practices observed in daily settings.

Document analysis complemented the primary data collection process by examining institutional health promotion materials, nutrition education campaigns, university wellness programs, and public health reports related to non-communicable diseases (Koengkan, 2023). This technique provided additional contextual information regarding the availability of nutritional education resources and preventive health initiatives targeting young adults.

The research applied thematic analysis techniques to interpret and analyze the collected data (Ogolla et al., 2025). Thematic analysis was selected because it allows researchers to systematically identify recurring patterns, themes, and meanings within qualitative data. The analysis process involved several stages, including data transcription, coding, categorization, theme identification, interpretation, and synthesis. Initially, all interview recordings were transcribed verbatim to preserve participants' original narratives. Subsequently, the researcher conducted open coding to identify significant statements and recurring concepts related to nutritional knowledge, dietary behavior, and NCD risk perceptions (Nishino et al., 2024).

After coding, the data were grouped into broader thematic categories such as nutritional awareness, unhealthy eating patterns, environmental influences, behavioral barriers, social support systems, and preventive health attitudes. These themes were then interpreted in relation to the theoretical frameworks employed in the study, including the Health Belief Model, Social Cognitive Theory, and Theory of Planned Behavior (Reid et al., 2023). Thematic interpretation enabled the researcher to connect individual experiences with broader conceptual understandings regarding health behavior and chronic disease prevention.

To ensure research credibility and trustworthiness, several validation strategies were implemented (Jean-louis, 2024). Data triangulation was conducted by comparing findings from interviews, observations, and document analysis. Source triangulation was also applied through the inclusion of participants and professional informants from different backgrounds. Member checking was employed by allowing selected participants to review interview summaries and clarify interpretations to ensure accuracy and authenticity of the findings. Furthermore, peer debriefing with academic colleagues and public health researchers was conducted to minimize subjective bias and strengthen analytical rigor.

Ethical considerations constituted an essential component of the research process (Nadal et al., 2024). All participants received detailed explanations regarding the study objectives, confidentiality procedures, voluntary participation, and their right to withdraw from the research at any stage without consequences. Written informed consent was obtained before data collection commenced. Participants' identities were anonymized through pseudonyms to protect privacy and maintain confidentiality. Additionally, all research procedures adhered to ethical principles concerning respect for participants, non-maleficence, and responsible data management consistent with international academic research standards.

The technique for drawing conclusions in this study followed an inductive analytical approach (Natali et al., 2024). Conclusions were generated gradually through continuous interaction between empirical findings, thematic interpretation, and theoretical reflection. Rather than imposing predetermined assumptions, the researcher allowed patterns and meanings to emerge naturally from participants' narratives and observed experiences. The final conclusions were formulated by synthesizing recurring themes, identifying relationships among concepts, and connecting the findings with the broader theoretical framework concerning nutrition knowledge, dietary behavior, and non-communicable disease risk.

Through this methodological approach, the study aimed to produce comprehensive and contextually grounded insights regarding the behavioral and environmental determinants influencing nutritional practices among young adults. The qualitative phenomenological design provided opportunities to explore the complexity of dietary behavior beyond statistical measurement while generating meaningful contributions to public health literature, nutrition education strategies, and preventive interventions addressing the growing burden of non-communicable diseases among younger populations (Patnaik et al., 2025).

RESULTS AND DISCUSSION

The findings of this study demonstrate that nutrition knowledge among young adults was generally categorized at a moderate level; however, such knowledge did not consistently translate into healthy dietary behavior (Angwaomaodoko, 2025). Most participants were capable of identifying the importance of balanced nutrition, reducing excessive sugar intake, limiting processed food consumption, and increasing fruit and vegetable intake. Nevertheless, the interview and observational findings revealed that unhealthy eating behavior remained dominant within participants' daily routines. Fast-food consumption, irregular meal timing, excessive intake of sugar-sweetened beverages, and low dietary fiber consumption were frequently identified among the participants (Saleh, 2025). These findings indicate that nutritional awareness alone remains insufficient to encourage sustainable healthy eating behavior among young adults living within contemporary urban environments.

The principal problem identified in this study concerns the inconsistency between nutritional knowledge and actual dietary implementation. Participants acknowledged understanding the long-term consequences of unhealthy eating patterns, including obesity, hypertension, diabetes mellitus, and cardiovascular disease (tiwari et al., 2024). However, practical dietary behavior was often shaped more strongly by convenience, social interaction, digital food marketing, financial limitations, and academic or occupational pressures than by nutritional understanding itself (Rashid et al., 2023). Participants such as "Rafi" and "Dimas" explained that despite being aware of healthy dietary recommendations, they frequently consumed instant foods, fast food, and high-calorie snacks because of demanding schedules and limited time for meal preparation. This finding confirms that behavioral and environmental barriers significantly weaken the practical application of nutritional literacy among young adults.

The results strongly support the Health Belief Model proposed by Godfrey Meredith Hochbaum (Frank et al., 2024). According to this theory, health behavior is influenced by perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. Participants generally demonstrated awareness regarding their vulnerability to non-communicable diseases and recognized the seriousness of long-term health consequences associated with unhealthy eating habits. Nevertheless, perceived barriers such as affordability, convenience, emotional stress, social obligations, and urban lifestyle demands frequently overpowered preventive motivation (Singh et al., 2023). The implementation of the Health Belief Model within this study demonstrates that awareness regarding disease risk does not automatically lead to healthy behavioral transformation when individuals perceive substantial obstacles to behavioral implementation. Consequently, preventive health programs should not only increase nutritional awareness but also address structural and behavioral barriers affecting dietary practices among young adults.

The findings also align with Social Cognitive Theory introduced by Albert Bandura (Venhof & Jeronimus, 2025). Participants repeatedly emphasized the influence of peers, digital media, social networking platforms, and environmental accessibility on their food choices. Many young adults selected food based on affordability, popularity, convenience, and social trends rather than nutritional value. Participants such as "Nadia" and "Sinta" explained that social gatherings frequently encouraged excessive consumption of fast foods and sugary beverages despite awareness regarding their negative health consequences. This finding confirms Bandura's perspective that behavior is shaped through reciprocal interactions between cognitive understanding, environmental conditions, and social reinforcement (Sacoto et al., 2024). The implementation of Social Cognitive Theory within this study suggests that nutritional interventions must incorporate environmental and social dimensions, including digital health campaigns and supportive institutional food environments.

Similarly, the findings support the Theory of Planned Behavior developed by Icek Ajzen (Diani, 2024). Many participants demonstrated positive attitudes toward healthy eating and expressed intentions to improve their dietary habits. However, these intentions often failed to produce consistent behavioral outcomes because of weak perceived behavioral control. Participants commonly reported difficulties maintaining healthy eating patterns because of irregular schedules, limited access to affordable nutritious foods, financial constraints, and social influences. According to Ajzen's theoretical framework, behavioral intention alone is insufficient unless individuals perceive adequate control over the implementation process (Elamin et al., 2025). Therefore, this study demonstrates that strengthening

self-efficacy, improving food accessibility, and creating supportive social environments are essential for encouraging healthy dietary behavior among young adults.

The findings also address the identified research gap concerning the limited integration of cognitive, behavioral, and environmental dimensions within previous nutritional studies (Cheng et al., 2025). Earlier research frequently examined nutrition knowledge and dietary behavior separately without comprehensively analyzing the interaction between these variables within broader social contexts. The present study demonstrates that nutritional literacy interacts dynamically with environmental exposure, emotional stress, peer influence, and behavioral constraints. Consequently, the research contributes a multidimensional understanding regarding the determinants of non-communicable disease risk among young adults. This integrative perspective represents an important novelty because it extends beyond traditional descriptive analyses commonly utilized within previous nutritional behavior research.

The research findings successfully answer the primary research questions formulated at the beginning of the study. The first research question concerned the extent to which nutritional knowledge influences dietary behavior among young adults. The findings indicate that nutritional knowledge positively contributes to awareness regarding healthy eating practices; however, its practical influence remains limited when unsupported by favorable environmental and social conditions (Majija, 2024). The second research question examined whether unhealthy dietary behavior contributes to increased risk of non-communicable diseases. The findings clearly demonstrate that participants with irregular eating schedules, excessive fast-food consumption, and low nutritional balance exhibited greater vulnerability to obesity, fatigue, and early symptoms associated with metabolic disorders (Roberts et al., 2024). The third research question investigated the influence of social and environmental factors on dietary behavior. The study confirmed that digital food marketing, peer interaction, financial conditions, and urban lifestyle patterns strongly shape dietary behavior among young adults (Amerzadeh et al., 2023).

The achievement of the research objectives can also be observed through the comprehensive exploration of participants' nutritional awareness, behavioral patterns, and health perceptions. The first objective aimed to evaluate nutritional knowledge among young adults. The findings revealed that most participants possessed moderate awareness regarding balanced nutrition and chronic disease prevention, although detailed understanding concerning nutrient composition and long-term health impacts remained limited. The second objective sought to identify prevailing dietary behavior patterns. The study found that unhealthy eating practices remained common despite growing exposure to nutrition education and health promotion campaigns. The third objective focused on examining the relationship between dietary behavior and non-communicable disease risk. The findings demonstrated that poor dietary behavior significantly increased participants' vulnerability to chronic disease risk factors (P. Wang et al., 2025).

The theoretical contribution of this study is particularly significant because the integration of the Health Belief Model, Social Cognitive Theory, and Theory of Planned Behavior provides a comprehensive explanation regarding the inconsistency between nutritional awareness and actual dietary implementation (Kyusa et al., 2023). The findings confirm that health behavior is influenced not only by cognitive understanding but also by environmental conditions, behavioral intentions, and perceived control mechanisms. This theoretical integration strengthens interdisciplinary discussions within public health, nutrition science, and behavioral research while emphasizing the necessity of multidimensional preventive approaches for reducing non-communicable disease risk among young adults.

Academically, the study enriches scholarly discussions concerning nutritional literacy and preventive health behavior among younger populations. Previous studies frequently focused on quantitative associations between nutrition and disease outcomes while overlooking subjective experiences and environmental influences affecting dietary behavior. This research contributes a qualitative and phenomenological perspective capable of capturing the complexity of dietary decision-making processes among young adults (Manderson & Jewett, 2023). Furthermore, the findings provide

a conceptual foundation for future interdisciplinary studies examining nutrition, public health, psychology, and behavioral science within rapidly modernizing societies.

Practically, the research findings possess important implications for policymakers, educational institutions, healthcare professionals, and public health organizations. Universities should strengthen nutrition education programs emphasizing practical behavioral implementation rather than merely providing theoretical knowledge. Public health campaigns should also integrate digital communication strategies capable of counteracting unhealthy food marketing targeting younger populations (Cerf, 2023). Healthcare professionals may utilize the findings to design personalized dietary counseling interventions focusing on self-efficacy, environmental adaptation, and behavioral reinforcement. Policymakers should also improve access to affordable healthy food options within university environments and urban communities to support sustainable dietary improvement among young adults.

The findings of this study are consistent with several previous investigations concerning nutrition knowledge and dietary behavior among younger populations. Earlier studies conducted by Laska and colleagues revealed that university students frequently consume high-calorie foods because of stress, convenience, and social influence despite understanding nutritional guidelines (Lanza et al., 2025). Similarly, research conducted by Contento emphasized that nutritional awareness alone cannot guarantee behavioral transformation without supportive environmental and psychological conditions (Lachance, 2025). The present findings reinforce these earlier conclusions while extending the discussion through the integration of three behavioral theories within a qualitative framework.

The study also contributes to resolving inconsistencies identified within previous literature. Earlier investigations often produced contradictory findings regarding the relationship between nutritional knowledge and healthy dietary behavior. Some studies reported strong positive associations, whereas others identified weak or insignificant relationships (Phatak, 2025). The present research clarifies these inconsistencies by demonstrating that the relationship between knowledge and behavior is mediated by environmental exposure, social reinforcement, behavioral intention, and perceived control. Consequently, the study provides a more comprehensive explanation regarding why nutritional awareness frequently fails to produce sustainable healthy eating behavior among young adults.

In relation to the identified research gap, the findings reveal that previous studies insufficiently addressed the influence of digital environments and urban lifestyle transformation on dietary behavior. Participants repeatedly emphasized the role of online food delivery services, influencer marketing, and social media trends in shaping eating patterns (Muratalieva et al., 2023). These contemporary influences represent important additions to existing public health discussions concerning non-communicable disease prevention. The implementation of Social Cognitive Theory within this context demonstrates that modern food environments significantly reinforce unhealthy dietary behavior despite increasing exposure to nutritional education.

The integration of the three theories also strengthens the practical implications of the study. The Health Belief Model explains participants' awareness regarding chronic disease risks and perceived barriers to healthy behavior. Social Cognitive Theory clarifies the role of environmental and social influences shaping dietary practices. Meanwhile, the Theory of Planned Behavior explains the discrepancy between positive behavioral intentions and inconsistent dietary implementation (Fričová et al., 2024). Together, these theories provide a multidimensional framework capable of guiding future nutritional interventions and preventive health programs more effectively.

The findings further demonstrate that non-communicable disease prevention among young adults requires comprehensive approaches integrating nutritional education, behavioral reinforcement, environmental support, and institutional policy interventions (Ndekezi et al., 2023). Nutritional knowledge alone remains insufficient when young adults continuously encounter unhealthy food environments, social pressure, time constraints, and aggressive digital food marketing. Therefore, preventive strategies should prioritize the development of supportive institutional environments, accessible healthy food systems, and sustainable health promotion initiatives targeting younger populations.

The demographic characteristics of participants are presented in the following table.

Table

Table 1 Demographic Characteristics of Research Participants

Participant Category	Characteristics	Frequency
Age	18–21 Years	10
	22–25 Years	9
	26–29 Years	6
Gender	Female	14
	Male	11
Educational Background	Health Sciences	8
	Social Sciences	7
	Economics and Business	5
	Engineering and Technology	5
Occupational Status	University Students	16
	Early-Career Professionals	6
	Freelancers and Community Activists	3

The thematic findings identified throughout the research process are summarized in the following table.

Table

Table 2 Major Themes Identified in the Research Findings

Main Theme	Sub-Themes	Interpretation
Nutrition Knowledge	Basic nutritional literacy, awareness of balanced diets, understanding of NCD risks	Participants generally possessed moderate nutritional awareness
Dietary Behavior	Fast-food consumption, irregular meal timing, low fruit and vegetable intake	Dietary practices remained inconsistent with nutritional understanding
Environmental Influence	Social media exposure, peer influence, food accessibility	External environments strongly influenced eating behavior
Health Awareness	Fear of obesity and chronic disease	Awareness did not always result in behavioral change

Main Theme	Sub-Themes	Interpretation
Behavioral Barriers	Academic stress, limited time, financial limitations	Lifestyle constraints weakened healthy dietary implementation

The relationship between nutrition knowledge, dietary behavior, and estimated non-communicable disease risk is presented below.

Table

Table 3. Relationship between Nutrition Knowledge and Dietary Behavior

Participant Group	Nutrition Knowledge Level	Dietary Behavior Pattern	Estimated NCD Risk
High Knowledge	Good understanding of nutrition	Moderately healthy but inconsistent	Moderate
Moderate Knowledge	Basic nutritional awareness	Frequent unhealthy food consumption	High
Low Knowledge	Limited understanding of nutrition	Highly unhealthy dietary practices	Very High

In conclusion, the findings confirm that nutrition knowledge, dietary behavior, and the risk of non-communicable diseases among young adults are interconnected through complex cognitive, social, and environmental relationships (Uprety et al., 2025). The study successfully addresses the principal research problem, fills important gaps within previous literature, and contributes a novel integrative perspective grounded in the Health Belief Model, Social Cognitive Theory, and Theory of Planned Behavior. Furthermore, the research fulfills its objectives by generating theoretical, academic, and practical insights regarding the determinants of dietary behavior and chronic disease prevention among young adults. Through these contributions, the study provides valuable implications for future public health policies, nutrition education programs, and interdisciplinary behavioral research focusing on preventive health strategies for younger populations.

CONCLUSION

This study concludes that nutrition knowledge, dietary behavior, and the risk of non-communicable diseases among young adults are interconnected through complex cognitive, behavioral, social, and environmental dimensions. The findings demonstrate that most young adults possess moderate awareness regarding balanced nutrition, healthy eating practices, and the potential long-term consequences of unhealthy dietary behavior. Participants generally understood the importance of reducing sugar consumption, limiting processed foods, increasing fruit and vegetable intake, and maintaining nutritional balance to prevent chronic diseases such as obesity, diabetes mellitus, hypertension, and cardiovascular disorders. However, the research findings reveal that nutritional awareness alone does not automatically translate into consistent healthy dietary behavior within daily life practices.

The study identified a significant discrepancy between participants' nutritional knowledge and their actual eating habits. Although young adults demonstrated awareness regarding the risks associated with unhealthy food consumption, many participants continued to engage in irregular eating schedules,

frequent fast-food consumption, excessive intake of sugar-sweetened beverages, and low dietary fiber intake. This inconsistency was strongly influenced by several behavioral and environmental factors, including academic pressure, occupational demands, limited preparation time, financial constraints, peer influence, digital food marketing, and urban lifestyle patterns. Consequently, the findings confirm that unhealthy food environments and social pressures substantially weaken the practical implementation of nutritional knowledge among young adults.

The conclusions of this research strongly support the theoretical perspectives utilized in the study. The Health Belief Model explains that participants recognized their vulnerability to non-communicable diseases and understood the seriousness of chronic health consequences resulting from unhealthy dietary behavior. Nevertheless, perceived barriers such as convenience, affordability, emotional stress, and social obligations frequently outweighed preventive motivations. This finding demonstrates that awareness regarding disease risk alone remains insufficient to encourage behavioral transformation when structural and psychological barriers persist within everyday environments.

Furthermore, the study validates the relevance of Social Cognitive Theory in explaining dietary behavior among young adults. The findings reveal that participants' eating practices were strongly shaped by environmental and social influences, including peer interactions, online food delivery services, social media trends, and digital advertising exposure. Many participants selected food based on convenience, popularity, affordability, and social acceptance rather than nutritional value. This condition confirms that dietary behavior is not solely determined by individual cognition but also by reciprocal interactions between personal understanding, environmental accessibility, and social reinforcement mechanisms.

The research also reinforces the Theory of Planned Behavior by demonstrating that positive attitudes toward healthy eating and strong behavioral intentions do not necessarily guarantee consistent implementation of healthy dietary practices. Participants frequently expressed intentions to improve their eating behavior; however, limited perceived behavioral control weakened their ability to maintain sustainable dietary changes. Factors such as limited access to healthy foods, irregular daily schedules, financial limitations, and social influences contributed significantly to inconsistent healthy eating behavior. Therefore, the findings emphasize that effective preventive interventions must strengthen self-efficacy, behavioral control, and supportive social environments to encourage healthier lifestyle patterns among young adults.

This study also successfully addresses the primary research problem concerning the inconsistency between nutritional knowledge and dietary behavior among younger populations. The findings demonstrate that the relationship between knowledge and behavior is mediated by environmental exposure, emotional conditions, behavioral intentions, and perceived barriers. Consequently, the research fills important gaps within previous literature by introducing a multidimensional perspective integrating cognitive, social, and behavioral determinants simultaneously. This integrative approach constitutes an important contribution to public health and nutritional science because it provides a more comprehensive understanding regarding the determinants of non-communicable disease risk among young adults.

The conclusions further indicate that preventive strategies focusing exclusively on nutrition education are unlikely to produce sustainable behavioral transformation without broader environmental and institutional support. Educational institutions, healthcare providers, and policymakers should therefore develop comprehensive interventions integrating nutritional literacy, behavioral reinforcement, accessible healthy food systems, and supportive social environments. Public health campaigns should also utilize digital communication platforms to counteract unhealthy food marketing and strengthen positive health promotion messages targeting younger populations.

Academically, this research contributes to the development of interdisciplinary discussions within public health, nutrition science, behavioral studies, and preventive medicine. The integration of the Health Belief Model, Social Cognitive Theory, and Theory of Planned Behavior provides a comprehensive conceptual framework capable of explaining the complexity of dietary decision-making processes among young adults. The study also offers valuable theoretical insights for future research

examining the interaction between nutritional literacy, environmental influences, and chronic disease prevention within modern societies.

Practically, the findings provide important implications for universities, community organizations, healthcare professionals, and policymakers in designing more effective nutrition education programs and preventive health interventions. The study emphasizes that improving nutritional awareness should be accompanied by efforts to create supportive food environments, strengthen behavioral motivation, and increase access to affordable healthy dietary options. Through multidimensional and collaborative approaches, preventive strategies can contribute more effectively to reducing the growing burden of non-communicable diseases among young adult populations.

Overall, the study concludes that the prevention of non-communicable diseases among young adults requires comprehensive interventions addressing not only nutritional knowledge but also behavioral, environmental, psychological, and social determinants influencing dietary practices. The findings confirm that sustainable healthy eating behavior can only be achieved when cognitive awareness is supported by favorable social environments, behavioral reinforcement mechanisms, and accessible institutional support systems. Through these contributions, the study provides meaningful insights for future public health policies, nutrition education initiatives, and interdisciplinary research focusing on chronic disease prevention among younger generations.

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