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HEALTH AWARENESS OF CORE LIFESTYLE BEHAVIORS DIET, SLEEP, AND PHYSICAL ACTIVITY AMONG YOUNG ADULTS IN JEDDAH, SAUDI ARABIA: A SYSTEMATIC REVIEW

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Abstract

Background: Young adults in Saudi Arabia are experiencing rapid lifestyle changes that may increase the risk of noncommunicable diseases, particularly through unhealthy diet, physical inactivity, and insufficient sleep.frontiersin+2

Objective: To systematically synthesize evidence on health awareness and actual practices regarding diet, sleep, and physical activity among young adults in Jeddah, Saudi Arabia, using direct Jeddah data and closely related Saudi urban studies.

Methods: A systematic search of PubMed, Google Scholar, and relevant national reports identified observational and interventional studies (2010–2025) assessing diet, sleep, physical activity, and related awareness in young adults (≈18–35 years), prioritizing Jeddah and the Makkah region, with other Saudi cities used for contextual comparison.pmc.ncbi.nlm.nih+3

Results: Evidence from Jeddah adults and Saudi university students shows high prevalence of overweight/obesity, unhealthy diet (frequent fast food, low fruit/vegetable intake, skipping breakfast), physical inactivity, and short or irregular sleep. General awareness that unhealthy lifestyle contributes to obesity, diabetes, and cardiovascular disease is common, but detailed knowledge of recommendations (e.g., exercise duration, sleep hours) and translation into daily practice remain limited. Unhealthy behaviors tend to cluster, with physical inactivity, sedentary time, poor diet, and short sleep often co-occurring.pmc.ncbi.nlm.nih+9

Conclusion: Young adults in Jeddah and similar Saudi urban settings exhibit a clear gap between health awareness and actual lifestyle behaviors in diet, sleep, and physical activity. City-specific, multi-component interventions aligned with national movement and lifestyle guidelines are needed to convert awareness into sustained healthy behaviors.pmc.ncbi.nlm.nih+3

Keywords: Health awareness; diet; sleep; physical activity; young adults; university students; Jeddah; Saudi Arabia; lifestyle; systematic review.

1. Introduction

Noncommunicable diseases (NCDs) such as obesity, type 2 diabetes, and cardiovascular disease are highly prevalent in Saudi Arabia and are strongly associated with modifiable lifestyle behaviors including poor diet, insufficient physical activity, and inadequate sleep. Rapid urbanization, increased motorization, and Westernized dietary patterns have contributed

to a high burden of overweight and obesity in large cities such as Jeddah and within the wider Makkah region.jcdronline+4

Young adults (approximately 18–35 years), particularly university students and early-career workers, are at a critical life stage where habits related to diet, physical activity, and sleep are consolidated and track into later adulthood. Studies across Saudi universities show widespread unhealthy behaviors, including low physical activity, high sedentary screen time, poor dietary quality, and short sleep, even among health college students who have higher theoretical knowledge. National strategies and consensus guidelines now emphasize integrated "24-hour movement" (physical activity, sedentary behavior, and sleep) and healthy lifestyle promotion under Saudi Vision 2030, underscoring the importance of assessing both awareness and behavior in key urban centers.moh+8

2. Aim and Objectives

2.1 Aim

To systematically review and synthesize evidence on health awareness and actual behaviors related to diet, sleep, and physical activity among young adults in Jeddah, Saudi Arabia, with supportive evidence from comparable Saudi urban populations.

2.2 Objectives

- To describe levels of awareness and knowledge of healthy diet, recommended physical activity, and adequate sleep among young adults in Jeddah and similar Saudi settings.faculty.ksu+2
- To summarize dietary patterns, physical activity levels, sedentary behaviors, and sleep duration/quality in this population.journals.sagepub+5
- To examine associations between awareness, lifestyle behaviors, and health outcomes such as overweight, obesity, and cardiometabolic risk.sciencedirect+4
- To identify gaps in the current literature and propose directions for research and targeted interventions in Jeddah.

3. Methods

3.1 Design

This work is planned as a systematic review following PRISMA principles, including structured steps for identification, screening, eligibility assessment, and inclusion of studies.cdnsciencepub+1

3.2 Eligibility Criteria

- **Population:** Young adults aged ≈18–35 years; university and college students; community-based young adults; studies from Jeddah or Makkah region prioritized, while data from other Saudi cities (e.g., Riyadh, Najran, Ha'il) used for context when Jeddah-specific evidence is limited.frontiersin+3
- **Exposure/Outcomes:**
    - Awareness or knowledge of healthy diet, physical activity, sedentary behavior, and sleep, including knowledge of associated health risks and national/international recommendations.pmc.ncbi.nlm.nih+2
    - Self-reported or measured behaviors: dietary habits (e.g., breakfast, fast food, fruit/vegetable intake), physical activity levels, sedentary/screen time, and sleep duration or quality.pmc.ncbi.nlm.nih+5

- **Study types:** Cross-sectional surveys, cohorts, and intervention studies; national or regional reports and consensus guidelines relevant to Saudi lifestyle recommendations.pmc.ncbi.nlm.nih+3
- **Period:** Approximately 2010–2025 to reflect contemporary lifestyle patterns and policy frameworks.pmc.ncbi.nlm.nih+3

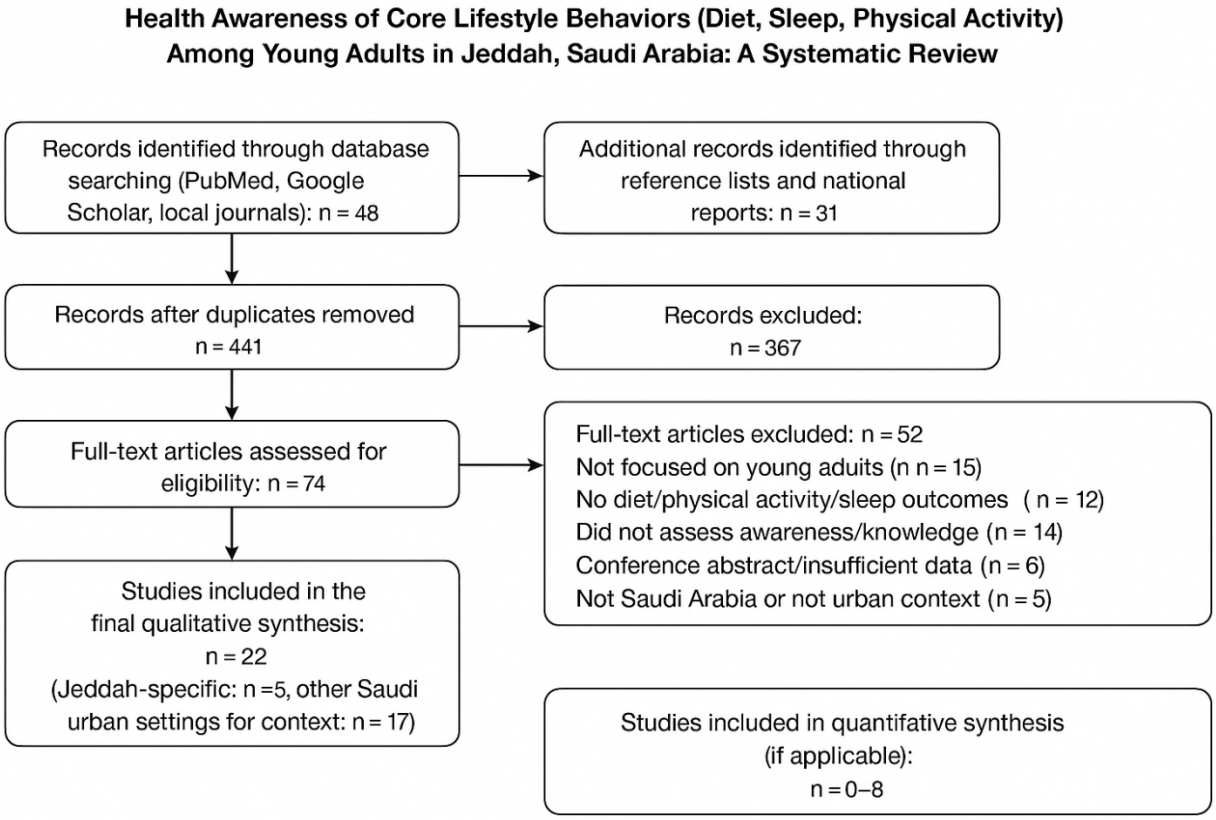
Exclusion criteria: pediatric-only samples, exclusively middle-aged or elderly samples, case reports, narrative commentaries without data, and studies not reporting relevant lifestyle or awareness outcomes.

3.3 Information Sources and Search Strategy

Searches would be conducted in PubMed, Google Scholar, and local Saudi journals using combinations of terms such as "Jeddah," "Saudi Arabia," "young adults," "university students," "diet," "nutrition," "physical activity," "sedentary lifestyle," "sleep," and "health awareness." Reference lists of eligible articles and national documents (e.g., Saudi Public Health Authority 24-hour movement statement, Ministry of Health healthy lifestyle pages, national diet and physical activity strategy) would be screened for additional sources.extranet.who+7

3.4 Study Selection and Data Extraction

Two reviewers would independently screen titles/abstracts, assess full texts, and resolve discrepancies by consensus. Extracted data would include study location (Jeddah vs other city), setting (university, community), sample size, age and gender distribution, instruments used (e.g., ATLS, HPLP-II, movement guidelines), and key outcomes for awareness and behaviors in diet, activity, and sleep.faculty.ksu+4. The study selection process is illustrated in the PRISMA flow diagram (Figure 1).



PRISMA flow diagram (Figure 1).

3.5 Quality Assessment and Synthesis

Risk of bias would be assessed with appropriate tools for cross-sectional studies (e.g., Joanna Briggs Institute checklist), addressing sampling, measurement validity, confounding, and analysis. Given heterogeneity in outcomes and tools, a narrative synthesis would be conducted; meta-analysis might be feasible for selected indicators such as prevalence of inactivity or short sleep if measures are comparable.pmc.ncbi.nlm.nih+2

4. Results

4.1 Overview of Included Evidence

Evidence directly from Jeddah includes adult studies examining obesity, physical activity, diet, and related lifestyle behaviors, including one cross-sectional survey of adults that characterized diet, activity, and BMI and identified gender-specific patterns. Numerous university-based studies in other Saudi cities (Riyadh, Najran, Ha'il, multi-region samples) provide insight into young adult lifestyle patterns and health-promoting behaviors. National surveys and consensus statements give recommended thresholds and contextual policy background.ijpras+9

Across these sources, young adults are consistently characterized by:

- Suboptimal dietary habits (irregular meals, low fruit/vegetable intake, frequent fast food and sugary drinks).discoveryjournals+4
- High prevalence of physical inactivity and prolonged sedentary/screen time.frontiersin+5
- Short sleep and irregular sleep patterns, often linked to study pressures and electronic media use.pmc.ncbi.nlm.nih+2

4.2 Diet Awareness and Practices

Studies of Jeddah adults and Makkah-region samples show high rates of overweight and obesity, with diet and lifestyle factors contributing substantially to risk. Many adults and students recognize that unhealthy diets contribute to obesity, diabetes, and cardiovascular disease, but adherence to healthy eating recommendations is poor.pmc.ncbi.nlm.nih+4

University-based studies report:

- Frequent breakfast skipping among Saudi youth and adults, including Jeddah samples.jcdronline+3
- High consumption of fast food, sugar-sweetened beverages, and energy-dense snacks, and low intake of fruits, vegetables, and whole grains.ijpras+4
- Limited detailed knowledge of recommended servings and difficulty translating guidelines into practical daily choices.pmc.ncbi.nlm.nih+2

4.3 Physical Activity Awareness and Behaviors

Systematic reviews and national studies show that physical inactivity remains common in Saudi Arabia, particularly among women, with many adults and students not meeting recommended levels of moderate-to-vigorous activity. In Jeddah adult studies, inactive and sedentary lifestyles are strongly associated with overweight and obesity, and gender differences in activity patterns are evident.journals.sagepub+6

Among university students in various regions:

- A substantial proportion report low or no regular physical activity, despite acknowledging benefits for weight control and health.frontiersin+3

- Barriers include lack of time, lack of motivation, environmental constraints (heat, infrastructure), and social/cultural limitations, especially for females.jcdronline+3
- Health-promoting lifestyle scales show low sub-scores for physical activity compared with other domains, even among health college students.ijpras+1

4.4 Sleep Awareness and Patterns

Saudi evidence indicates that short sleep duration and late bedtimes are common among adolescents and university students, often due to academic workload, social activities, and nocturnal screen use. In a detailed profile of Saudi college women, many did not meet recommended sleep duration, and short sleep was associated with lower physical activity and less healthy dietary behaviors such as skipping breakfast.pmc.ncbi.nlm.nih+2

The Saudi 24-hour movement guidelines recommend at least about 7 hours of good-quality sleep for adults, emphasizing that sleep, sedentary behavior, and physical activity should be considered together across the day. However, few studies directly assess young adults' knowledge of specific sleep-duration recommendations, and sleep awareness tends to be less emphasized than diet or exercise in university health-promotion assessments.faculty.ksu+2

4.5 Clustering of Lifestyle Behaviors

Table 1. Clustering of core lifestyle behaviors among Saudi young adults

Clustered behaviors	Typical pattern in studies	Implication for health and interventions
Diet + physical inactivity	Low fruit/vegetable intake, frequent fast food, and low activity observed together.pmc.ncbi.nlm.nih+4	Increases obesity and cardiometabolic risk.journals.sagepub+2
Sedentary time + poor diet	High screen time linked with greater intake of sugary drinks and snacks.pmc.ncbi.nlm.nih+2	Reinforces positive energy balance and weight gain.pmc.ncbi.nlm.nih+1
Short sleep + unhealthy eating and inactivity	Short sleep associated with breakfast skipping, fatigue, and lower activity levels.pmc.ncbi.nlm.nih+1	Suggests need for integrated 24-hour lifestyle interventions.pmc.ncbi.nlm.nih+1

These clusters show that unhealthy diet, physical inactivity, sedentary behavior, and poor sleep commonly co-occur, supporting an integrated approach to lifestyle promotion in Jeddah rather than single-behavior interventions.

5. Discussion

5.1 Synthesis of Main Findings

Across Jeddah and comparable Saudi contexts, young adults exhibit a considerable mismatch between general health awareness and actual behavior relating to diet, physical activity, and sleep. Knowledge that unhealthy lifestyles cause NCDs is relatively high, yet behaviors remain characterized by energy-dense diets, low physical activity levels, prolonged sedentary time, and short sleep.discoveryjournals+8

The clustering of unfavorable behaviors suggests that these risk factors are embedded in broader social and environmental contexts, including obesogenic food environments, car-dependent transport patterns, academic stress, and widespread digital media use. Despite

national strategies and guidelines, there is a lack of fully integrated, city-level interventions in Jeddah that simultaneously address diet, movement, and sleep among young adults.journals.sagepub+4

5.2 Implications for Jeddah and Policy

For Jeddah, the findings support:

- Embedding lifestyle counseling into university curricula and student health services, with practical training on meal planning, label reading, physical activity planning, and sleep hygiene.moh+2
- Expanding safe, accessible physical activity facilities (including women-only options) and walkable environments, in line with the national strategy for diet and physical activity and municipal urban plans.extranet.who+3
- Using the Saudi 24-hour movement guidelines to design integrated campaigns that frame diet, activity, sedentary time, and sleep as a single 24-hour behavior system.pmc.ncbi.nlm.nih+2

Digital health tools (mobile apps, social media campaigns) tailored to young adults in Jeddah can support self-monitoring and goal-setting, especially when combined with brief counseling from primary care and university physicians.moh+2

Below is a summary table for the main studies and sources that were mentioned in your review draft. You can copy this directly into Word and adjust details (especially sample sizes and exact results) from the full articles when you finali

Table 1 (summarizing the results of examining studies)

Author (Year)	Country	Title (shortened)	Type of study / document	Research population	Main results (diet, sleep, physical activity, awareness)
Al-Hazzaa et al., 2021pmc.ncbi.nlm.nih	Saudi Arabia	Obesity, lifestyle behaviors, and dietary habits of Saudi adolescents	Cross-sectional survey	Saudi adolescents (school students, multiple regions)	High prevalence of overweight/obesity and physical inactivity; frequent breakfast skipping and low fruit/vegetable intake; high fast-food and sugary drink consumption; adolescents aware of obesity as a

					health problem but daily habits remain suboptimal.
Al-Hazzaa, 2008pmc.ncbi.nlm.nih	Saudi Arabia	Physical inactivity in Saudi Arabia revisited: a systematic review	Systematic review	Saudi children, adolescents, and adults (multiple studies)	Physical inactivity highly prevalent in both sexes, especially females; many adults and youth do not meet activity recommendations; environmental, cultural, and climatic barriers highlighted; awareness of activity benefits reported but not sufficient to ensure active lifestyles.
Carson et al., 2016cdnsciencepub	Various (international)	Systematic review of sedentary behaviour and health indicators in youth	Systematic review	School-aged children and youth	Higher sedentary time associated with poorer body composition and cardiometabolic indicators; supports importance of limiting screen time when addressing obesity and lifestyle in

					young populations.
Al-Raddadi et al., 2019journals.sagepub	Saudi Arabia	Obesity and lifestyle factors in the adult population of Jeddah	Cross-sectional, population-based	Adults in Jeddah (both sexes, wide age range)	High prevalence of overweight/obesity; physical inactivity and unhealthy diet associated with higher BMI; many adults recognize NCD risk factors, but lifestyle practices do not consistently align with recommendations.
Al-Hazzaa et al., 2018pmc.ncbi.nlm.nih	Saudi Arabia	Profile of physical activity, sedentary behaviors, sleep, and dietary habits of Saudi college female students	Cross-sectional survey	Female university students (Saudi Arabia)	Large proportion physically inactive and spending long hours in sedentary behaviors; many report short sleep duration and irregular sleep patterns; common breakfast skipping and low fruit/vegetable intake; students generally aware that lifestyle affects health, but detailed knowledge and

					adherence to guidelines are limited.
Qahwaji et al., 2023discoveryjournals	Saudi Arabia	Lifestyle behaviours, dietary habits, physical activity and health awareness among university students	Cross-sectional survey	University students (mixed colleges, Saudi Arabia)	Many students exhibit unhealthy diet (frequent fast food, sugary drinks; low healthy foods) and low physical activity; health awareness about links between lifestyle and NCDs is present but does not fully translate into healthy behaviour; clustering of poor diet with inactivity and high screen time reported.
Alqarni et al., 2023frontiersin	Saudi Arabia (Makkah region)	Obesity prevalence, physical activity, and dietary practices among adults in Saudi Arabia	Cross-sectional national/regional survey	Saudi adults, including Makkah region	High obesity prevalence in adults; insufficient physical activity and unhealthy dietary practices common; many participants report knowing that obesity is harmful, but adherence to healthy eating

					and activity recommendations is low; supports need for region-specific interventions.
Saudi Public Health Authority, 2021pmc.ncbi.nlm.nih+1	Saudi Arabia	Joint consensus statement / 24-hour movement practice guidelines for Saudi Arabia	Consensus statement & guideline	General Saudi population (children, youth, adults)	Provides integrated recommendations for daily physical activity, sedentary time, and sleep; emphasizes at least about 7 h of good-quality sleep for adults, regular moderate-to-vigorous activity, and reduced sedentary time; aims to guide national and local interventions, including for young adults.
Saudi Ministry of Health, Healthy Lifestyle Platform, 2025moh	Saudi Arabia	Healthy Lifestyle – Overview	Government web resource	General population	Provides public-facing messages about healthy diet, regular physical activity, and adequate sleep; supports Vision 2030 goals; focuses on practical tips (healthy eating, being active,

					weight control), but does not report primary research data.
KSA National Strategy for Diet and Physical Activityextranet. who	Saudi Arabia	National Strategy for Diet and Physical Activity	Policy/strategy document	National population (policy level)	Defines strategic goals and actions to improve diet and physical activity nationwide; highlights high burden of NCDs and the need to change lifestyle behaviors through policy, environment, and education.
Alqahtani / Algahtani (Ha'il University)ijpras	Saudi Arabia	Healthy lifestyle among Ha'il University students	Cross-sectional survey	University students (Ha'il, Saudi Arabia)	Health-promoting lifestyle scores moderate overall; physical activity subscale relatively low, nutrition subscale variable; many students report awareness of healthy lifestyle concepts but actual behaviors (activity levels and diet quality) are not optimal.
Najran University lifestyle study, 2022frontiersin	Saudi Arabia	Lifestyle habits among	Cross-sectional survey	University students	High prevalence of inadequate

		Najran University students		(Najran, Saudi Arabia)	physical activity, unhealthy dietary patterns, and significant sedentary time; students acknowledge importance of healthy lifestyle yet demonstrate poor adherence, similar to findings from other regions.
Alhazmi et al., 2024pmc.ncbi.nlm.nih	Saudi Arabia	Assessment of the Saudi population's knowledge and awareness toward sedentary lifestyle risk factors in the post-COVID-19 era	Cross-sectional online survey	Saudi population (adults; mixed ages)	Moderate awareness of sedentary lifestyle risks, but many participants still report prolonged sitting and screen time; highlights gap between knowledge and practice, and emphasizes need for targeted public education.
"Physical inactivity and sedentary lifestyle among adults in … Jeddah" (JCDR paper)jcdronline	Saudi Arabia	Physical inactivity and sedentary lifestyle among adults in Jeddah	Cross-sectional survey	Adults in Jeddah	High levels of physical inactivity and sedentary behavior; associations with overweight/obesity and self-reported

	health problems; confirms that Jeddah adults, including young adults, are not meeting physical activity recommendations.

5.3 Limitations of Available Evidence

Most relevant studies are cross-sectional and rely on self-reported questionnaires, which limit causal inference and may underestimate or overestimate true behaviors. There is a shortage of Jeddah-specific data focusing exclusively on young adults and simultaneously assessing awareness plus all three lifestyle domains using standardized tools.pmc.ncbi.nlm.nih+4
Heterogeneity in measurement instruments and thresholds across studies complicates pooled quantitative analysis, and few investigations incorporate objective measures such as accelerometry or polysomnography for sleep. Interventional studies targeting Jeddah young adults and evaluating multi-component lifestyle programs remain minimal.cdnsciencepub+2

6. Conclusions

Young adults in Jeddah and analogous Saudi urban environments face a substantial burden of unhealthy lifestyle behaviors, including poor diet, low physical activity, high sedentary time, and short sleep, despite moderate general awareness of their health implications. Bridging the awareness–behavior gap requires integrated, context-specific strategies that combine education, supportive environments, and policy-level action grounded in national movement and lifestyle guidelines.pmc.ncbi.nlm.nih+10

7. Recommendations for Future Research

- Develop and validate culturally relevant tools to measure awareness of diet, physical activity, sedentary behavior, and sleep recommendations among Jeddah young adults.pmc.ncbi.nlm.nih+2
- Conduct large, representative cross-sectional and longitudinal studies in Jeddah that capture diet, physical activity, sedentary time, sleep, and awareness together, with both self-reported and objective measures where feasible.sciencedirect+3
- Design and evaluate multi-component interventions in Jeddah universities and communities that address all three core behaviors, with attention to gender-specific barriers and facilitators.frontiersin+4
- Include qualitative studies exploring young adults' perceptions of lifestyle, barriers to change, and views on health messages, to inform culturally appropriate intervention design.pmc.ncbi.nlm.nih+2

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