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Perceived Barriers for Physical Activity in Overweight and Obese Youth: A Scoping Review

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ABSTRACT

Background and Aims: Overweight and obesity among youth represent a critical public health issue, with physical activity (PA) serving as a cornerstone of effective weight management. Despite its significance, youth living with overweight and obesity (YLWOO) often encounter perceived barriers that hinder regular engagement in PA. The objective of this scoping review was to identify the perceived barriers to exercise in YLWOO.

Methods: We conducted this scoping review in accordance with the Joanna Briggs Institute (JBI) methodological framework, focusing on youth aged 18–29 years with a Body Mass Index (BMI) ≥ 25 kg/m² living with overweight or obesity. We subsequently performed a comprehensive search of the literature across multiple electronic databases, including PubMed, CINAHL, Embase, The Cochrane Library, Web of Science, and Scopus. Finally, we analyzed the extracted data using qualitative content analysis.

Results: Sixty-four studies were included in this scoping review. Qualitative content analysis identified six primary categories of perceived barriers: environmental and structural, intrapersonal, interpersonal and social, psychological and emotional, behavioral and lifestyle, cultural and contextual. Across the 64 included studies, a total of 165 references to barriers were identified. Environmental and structural barriers were the most prevalent, accounting for 54, whereas cultural and contextual barriers were the least reported, with 10 references.

Conclusion: This pioneering scoping review systematically maps the perceived barriers to PA for YLWOO, categorizing them into six principal themes. Environmental and structural barriers emerged as the most pervasive, underscoring a pressing need for policy-level attention. Conversely, cultural and contextual factors were the least cited, a finding which may itself reflect a relative paucity of investigation in these areas. This identifies a critical research gap warranting further inquiry and highlights the necessity for tailored, multi-level interventions to promote PA effectively within this population.

Abbreviations: BMI, body mass index; PA, physical activity; PRISMA, preferred reporting items for systematic reviews and meta-analyses; YLWOO, youth living with overweight and obesity.

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1 | Introduction

The global prevalence of pre-obesity and obesity has risen significantly in recent decades, with extensive epidemiological evidence establishing strong associations between these conditions and the development of major non-communicable diseases (NCDs). Numerous longitudinal studies have demonstrated consistent links with type 2 diabetes mellitus (T2DM), cardiovascular diseases (CVDs), and various obesity-related malignancies [1].

The British Psychological Society (BPS) states, “Only a biopsychosocial approach can account for the fact that individuals and environments both have an important role to play in the development of obesity and influence each other.” This approach includes biological, social, environmental, and psychological factors, categorizing physical activity (PA) and sedentary behavior as social and environmental influences [2]. Regular PA is critical for effective obesity management [3, 4]. Evidence suggests PA should be moderate-to-vigorous, with at least 150 min per week for effective body weight regulation [4]. Studies have shown that many individuals struggle to meet their PA goals, and their adherence tends to decline over time [5]. Exercise intentions do not always translate into actual behavior, indicating that while intentions can be useful for predicting exercise behavior, they are often insufficient on their own [6]. The emergence of “emerging adulthood” (between ages 18 and 29), along with the transition from school to work and independent living, significantly impacts the maintenance of behaviors such as PA throughout life [7, 8]. Several theoretical models identify barriers to PA that hinder regular exercise.

The Health Belief Model (HBM) highlights “perceived barriers,” which influence exercise engagement based on beliefs about obstacles like time, cost, or facilities, countered by strong perceived benefits [9–11]. For instance, an individual may believe exercise is too time-consuming and inconvenient, viewing these immediate costs as outweighing the longer-term, abstract health gains [12]. The Theory of Planned Behavior (TPB) includes “perceived behavioral control,” reflecting how individuals view barriers and resources; a lack of motivation or support can weaken this control and lower exercise intentions [13]. For instance, specific barriers faced by adolescents, such as “lack of time,” “academic pressure and homework commitments,” “limited access to nearby recreational facilities,” and “the compelling allure of video and mobile games,” directly shape perceptions regarding the feasibility of regular PA. When these obstacles are perceived as insurmountable, the individual develops a sense of diminished personal agency over their schedule and choices. This attenuated PBC renders the intention to exercise seemingly futile, thereby directly contributing to a state of physical inactivity [14].

Social Cognitive Theory (SCT) underscores self-efficacy as essential for behavior change, noting that barriers such as fatigue and environmental factors like safety can diminish it [13, 15]. Ecological Models classify barriers into individual (e.g., lack of motivation), environmental (e.g., poor infrastructure), and socio-cultural (e.g., family obligations) [16, 17].

The Behavioral Economics Framework indicates that perceived barriers may result in sedentary behavior, shaped by the

perceived value of inactivity compared to exercise, considering cost and convenience [18, 19]. For example, the immediate costs and hassles of exercise create a powerful barrier, yet research shows that combining exercise with an exclusive and tempting reward can alter this valuation, thereby significantly increasing gym attendance [20].

Research has identified several primary barriers to PA, including lack of motivation, pain, and time constraints. Additional obstacles may include childcare responsibilities, limited space at home, high gym membership costs, and the inability to exercise during work hours. This prompts the question of whether these challenges are genuine barriers or simply excuses, as studies also highlight factors such as poor self-control, insufficient support, and persistent time constraints [21–23].

Policy-makers should consider personal, social, and environmental barriers when developing intervention programs. Health-promoting strategies are required to increase awareness and motivation related to PA [24]. The findings highlight that barriers differ across groups, indicating that interventions should be tailored to effectively address these unique perceptions [25].

In addition, social perceptions and stigma associated with obesity can reduce participation in PA and create gaps in fitness opportunities and social inclusion [26, 27]. Youth with obesity are less active than the general population, making it crucial to explore the factors that hinder their PA [28].

Youth encounter specific challenges as they move from adolescence to adulthood, which can affect their lifelong habits. It is essential to identify the barriers that keep youth living with overweight and obesity (YLWOO) from engaging in PA to develop effective solutions. This scoping review highlights these barriers. By addressing the unique challenges of this group, we can create a more inclusive approach to health and wellness that benefits everyone.

1.1 | Conceptualizing Perceived Barriers

Scientific studies have advanced a variety of theoretical frameworks to elucidate the determinants of PA behavior change [29]. Among these, the Socioecological Framework provides a multi-level perspective that incorporates environmental and political determinants. These broader, external factors are conceptualized as encompassing objective barriers, such as a lack of recreational infrastructure or the presence of unsafe neighborhoods, which exist independently of an individual's perception.

In contrast, frameworks centered on individual-level processes, such as the Social Cognitive and Dual Process approaches, focus on internal determinants. These models emphasize the role of subjective perceptions, including cognitive constructs like beliefs, attitudes, and self-efficacy, as well as non-conscious processes such as automatic evaluations and hedonic responses. These frameworks differentiate between structural barriers—external, objective impediments—and subjective, cognitive-emotional barriers to PA [29–31]. For this scoping review, a “perceived barrier” is defined as any cognitive mediator, originating from either internal states or external circumstances, which an

individual identifies as hindering their initiation or maintenance of PA. Such barriers may originate from a person's belief in their inability to overcome a challenge, or from environmental and structural conditions they perceive as obstructive.

The primary objective of this scoping review is to systematically map and categorize the existing literature concerning barriers to exercise, with a specific focus on YLWOO, aged 18–29 years, and with a BMI of ≥ 25 kg/m².

2 | Scoping Review Questions

1. What challenges do youth living with overweight and obesity encounter regarding PA?
2. What categories of perceived barriers to PA exist among youth living with overweight and obesity?
3. How do demographic factors relate to perceived exercise barriers in youth living with overweight and obesity?

3 | Inclusion Criteria

3.1 | Participants

The inclusion criteria for this scoping review were studies involving youth aged 18–29 years with a BMI of ≥ 25 kg/m². Consequently, studies encompassing broader demographic ranges in terms of age and BMI were deemed eligible only if they contained data that could be disaggregated to isolate the specified priority cohort.

3.2 | Concept

The focus of this scoping review was on identifying studies examining barriers to PA among YLWOO.

3.3 | Context

This scoping review encompasses studies conducted across diverse educational and community settings, including universities, urban health clinics, and community health centers, all involved in research and health initiatives aimed at enhancing community health and wellbeing.

4 | Types of Studies

In our scoping study, we included a diverse range of research methodologies to ensure a comprehensive understanding of the topic. Cross-sectional studies were prominently featured, as they provide valuable insights by collecting data from various individuals at a single point in time, allowing for the analysis of relationships among variables without inferring causation. We also incorporated longitudinal studies, which track changes over time by repeatedly observing the same subjects, offering depth to our findings. Qualitative research designs were essential in capturing nuanced perspectives through methods such as focus groups and interviews, enabling us to explore participants' experiences and interpretations. Additionally, we

examined systematic reviews that synthesize existing literature, providing an overarching view of the current state of research. Randomized controlled trials (RCTs) were included for their rigor in testing interventions and establishing causal relationships. We also considered mixed-methods approaches, which combine qualitative and quantitative data, enriching our analysis with multiple viewpoints. Overall, this variety of sources allowed us to build a robust framework for understanding the complexities of the subject matter. This categorization reflects the diversity of methodologies included, with cross-sectional studies being the most prevalent. Only English-published data were included. We focused on peer-reviewed studies using scientific methods and didn't include grey literature to enhance transparency and reproducibility, and because scientific articles are more easily accessible.

5 | Methods

This scoping review followed JBI methodology [32]. The objective of this scoping review is to systematically map and categorize the existing literature concerning barriers to exercise in YLWOO aged 18–29 years with a BMI of 25 kg/m² or higher.

5.1 | Search Strategy

Published studies were retrieved from databases including PubMed, CINAHL, Embase, The Cochrane Library, Web of Science, Scopus, and Google Scholar. An experienced information specialist developed the search strategy using a three-step process involving controlled vocabularies (e.g., MeSH terms) and keywords. An initial limited search was performed in PubMed, followed by analysis of text words contained in relevant titles and abstracts, as well as the index terms used to describe these articles. These terms were subsequently used to develop comprehensive search strategies tailored for each database (see Table 1). All searches were verified by a content expert and peer-reviewed by a second health sciences librarian using the Peer Review of Electronic Search Strategies (PRESS) guideline [33].

5.2 | Source of Evidence Selection

We imported the published literature into EndNote 20.4 (Clarivate Analytics, PA, USA) and removed duplicates, including any not flagged by the software, which were manually deleted during screening. Unique references were then transferred to Rayyan (<https://rayyan.ai/>) for a two-phase eligibility assessment. Initially, titles and abstracts were screened against the inclusion criteria, followed by a full-text review for final inclusion decisions. Each reference underwent evaluation by two independent reviewers from the research team (NK, BB) at both stages, with disagreements resolved through discussion with HA.

5.3 | Data Extraction

Data extraction was performed using a standardized form developed for this scoping review. Three independent reviewers

TABLE 1 | PubMed search strategy for barriers to PA in overweight/obese youth.

Search number	Query	Results
1	#2 AND #3 AND #4 AND #5	2118
2	(((((“Obesity”[Mesh]) OR (“Overweight”[Mesh])) OR (Obes*[Text Word])) OR (adiposity [Text Word])) OR (overweight[Text Word])) OR (fat[Text Word])	754,396
3	((“Young Adult”[Mesh]) OR (Young*[Text Word])) OR (youth[Text Word])	1,866,953
4	(((((“Exercise”[Mesh]) OR (“Sports”[Mesh])) OR (Exercise*[Text Word])) OR (Physical Activity[Text Word])) OR (Physical Activities[Text Word])) OR (Sport*[Text Word])) OR (Athletic*[Text Word])	790,498
5	((barrier*[Text Word]) OR (limit*[Text Word])) OR (obstacle*[Text Word])	2,760,348

extracted data from each included report regarding the study characteristics, including author(s), year, origin/country of origin (where the study was published or conducted), aims/purpose, study population, methodology/methods, context, design, theoretical framework, PA assessment methods, identified barriers to PA, data collection methods, and outcome criteria. Disagreements between reviewers were resolved through discussion until consensus was reached.

5.4 | Data Analysis and Presentation

A qualitative content analysis, utilizing an inductive process, was employed in this scoping review. This analytic process involved systematically identifying, coding, and categorizing perceptual barriers to exercise among YLWOO. We carefully examined the extracted data and broke them down into meaningful pieces, which we then turned into initial codes. These codes highlighted common barriers described across the studies. Similar codes were then grouped into broader categories, facilitating the identification of consensus across the data and synthesizing the results. Two independent reviewers thoroughly read and re-read all extracted data, coding the information according to the established categories.

To assess the robustness of our findings, a sensitivity analysis was performed by excluding five studies with the narrowest age overlap with our target population [35, 38, 42, 57, 61]. The ranking of the six main barrier themes remained unchanged after their exclusion.

5.5 | Artificial Intelligence (AI) Statement

The authors used the AI tool DeepSeek solely for language editing and grammar checking, after all data extraction, analysis, coding, and interpretation were completed. No AI tool was used for data extraction, coding, thematic analysis, or any decision-making process. The corresponding author takes full responsibility for the accuracy and integrity of all data and conclusions.

6 | Results

6.1 | Study Inclusion

The database search returned 16,934 records, along with 56 from other sources. After removing 9085 duplicates, 7905 records were screened by title and abstract, leading to 7793

exclusions due to irrelevance. A total of 112 full-text articles were assessed for eligibility. Of these, 48 articles were excluded, resulting in 64 studies that met the inclusion criteria for this scoping review. The reasons for exclusion of the 48 full-text articles were as follows: 33 studies lacked BMI data; three studies included participants with a BMI below 25; five studies did not address barriers to PA; five studies included participants outside the target age range (i.e., under 18 or over 29 years); and two studies focused on postpartum women or women with polycystic ovary syndrome, which were outside the scope of this review. A PRISMA flowchart detailing the study selection at each stage is provided in Figure 1. The main characteristics and main findings of included studies are provided in Supplementary Files 1 and 2.

6.2 | Main Characteristics of the Included Studies

6.2.1 | Study Population

The included studies encompassed a broad range of sample sizes, varying from 10 to 931,116 participants, drawn from multiple databases. The study populations represented diverse demographic groups, including university students (e.g., undergraduates, medical, and nursing students), youth (aged 18–29), YLWOO (BMI ≥ 25 or ≥ 30), women of reproductive age, and specific ethnic or occupational subgroups, including Latina women, African-American women, firefighters, and truck drivers.

For studies that included a wider age demographic, the results were critically appraised to ascertain whether the reported barriers were disaggregated by age. Where age-stratified data were presented, only obstacles pertinent to the 18–29-year-old cohort were extracted. In instances where findings were not stratified, the reported barriers were deemed applicable to our analysis only if the study population encompassed our target age range and the obstacles were interpreted as representing a common experience across the included age spectrum. Furthermore, regarding BMI, studies with heterogeneous BMI populations were only included if they explicitly encompassed participants with a BMI of ≥ 25 kg/m².

6.2.2 | Design of the Included Studies

The included studies employed a range of methodological approaches, encompassing cross-sectional, longitudinal, qualitative, and mixed-methods designs, as well as RCTs and systematic

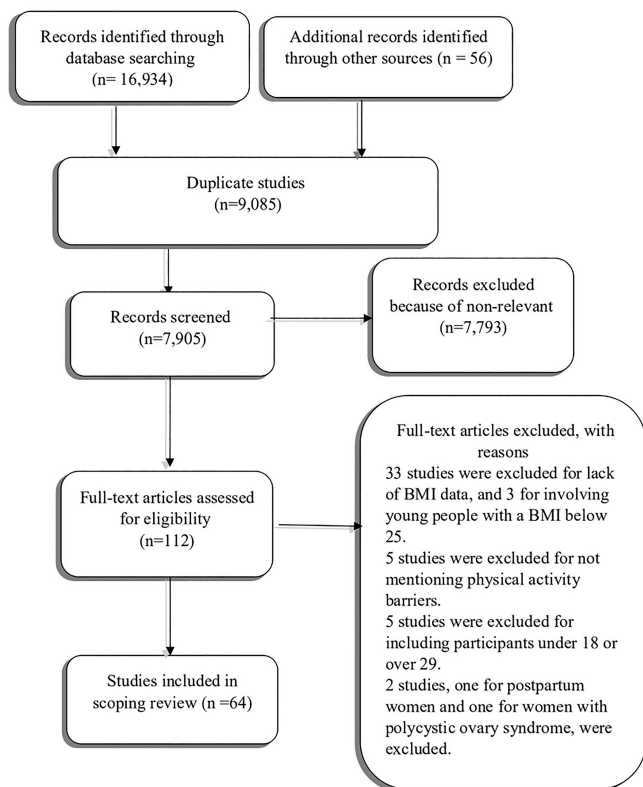


FIGURE 1 | PRISMA flowchart of study selection and inclusion process.

reviews. These methodologies—spanning observational, experimental, and integrative research paradigms—were utilized to investigate diverse research questions within the health and behavioral sciences.

6.2.3 | Context

The studies included in this scoping review were conducted across a wide range of geographical locations. The majority of the research was carried out in the United States, Australia, the United Kingdom, Canada, India, and Saudi Arabia. A further group of studies contributed evidence from Colombia, Egypt, Germany, Iran, and Malaysia. The global scope of the review was further enhanced by single studies from Bangladesh, Barbados, Belgium, China, Ghana, Ireland, Jordan, Kuwait, Qatar, and Spain. The settings for these included studies were equally varied, encompassing university campuses, primary and secondary healthcare facilities, and community-based organizations. This diversity in both national context and institutional setting underscores the global and multidisciplinary nature of the available evidence, which spans urban, rural, and virtual environments.

6.2.4 | Data Collection Methodology

The data collection methodologies employed in the studies were diverse and comprehensive, utilizing both quantitative and qualitative approaches to gather robust and multifaceted data. Quantitative methods included self-administered, mailed, and online surveys, often supplemented with anthropometric measurements and clinical assessments. Structured questionnaires were frequently used to collect sociodemographic, lifestyle, and

health-related data, with some studies employing follow-up reminders to enhance response rates.

Qualitative methods featured prominently, with semi-structured interviews, focus group discussions, and participant observations being conducted across various settings. These were often audio-recorded, transcribed, and analyzed using thematic or content analysis, supported by software tools such as NVivo, Atlas. ti, and Leximancer. Mixed-methods approaches were also common, combining surveys, interviews, and focus groups to provide a deeper understanding of barriers, behaviors, and perceptions. Additionally, some studies incorporated accelerometer data, geocoding, and health risk appraisals to complement self-reported measures. The methodologies were designed to ensure data saturation, cultural relevance, and validation, with many studies piloting instruments and employing iterative processes to refine data collection tools. Overall, the approaches reflect a rigorous and adaptable framework tailored to the specific contexts and populations under investigation.

6.3 | Main Findings of the Review

Identified challenges and categorization of perceived barriers to PA among YLWOO: YLWOO encounters significant challenges to engaging in PA. To systematically classify these challenges, perceived barriers were categorized according to the advanced domain review (ADR) framework. The study delineated six principal barrier categories; their respective frequencies are presented in Table 2 and summarized schematically in Figure 2.

6.4 | Relationship of Demographic Factors With Perceived Barriers to PA

A subset of included studies reported data stratified by demographic characteristics (age, gender, socioeconomic status, or cultural background). The following patterns are derived from this subset and should be interpreted with caution, as substantial heterogeneity existed across studies in geographical setting, cultural context, measurement methods, and sample characteristics.

In studies that reported age-stratified data, younger youth (18–21 years) more frequently cited intrapersonal obstacles such as time constraints and motivational deficits compared with older participants [34–36]. Conversely, older youth (22–30 years) more frequently cited structural impediments including work-family conflicts and environmental limitations in several studies [17, 37–39]. However, this pattern was not consistently observed across all geographical contexts. Across studies that examined gender differences, women more frequently cited psychological, sociocultural, and safety-related challenges, including gender stereotypes [13, 17, 38, 40, 78], fear of weight-based stigmatization [26, 27], perceived environmental unsafety [41, 42], cultural restrictions [43, 84], and familial caregiving obligations [37, 38, 44, 45]. In other studies, men more frequently cited structural barriers such as inadequate peer support [24, 46, 47], financial limitations [48], and stigma associated with non-normative PA participation [47, 49]. Among studies that investigated socioeconomic status,

TABLE 2 | Themes and subthemes of perceived barriers to PA.

Theme	Subthemes
Environmental and structural barriers [11, 13, 15–17, 21–24, 27, 34–77]	<p>Access to facilities and resources and economic constraints</p> <ul style="list-style-type: none"> • Lack of access to exercise facilities [11, 35, 38, 45, 48, 55–61] • Financial constraints [17, 39, 42, 44, 47, 50–54] • Lack of facilities [11, 13, 37, 41, 43, 47, 54] • Lack of place to exercise [43, 46, 48, 54, 65, 73] • Low socioeconomic status [42, 56, 58, 72] • Lack of convenient places [38, 46, 73] • Unemployment [42, 51, 72] • Inability to exercise at work [22, 74] • Lack of amenities [58, 76] • Lack of resources [11, 40] • Lack of health insurance coverage [42] <p>Time constraints</p> <ul style="list-style-type: none"> • Lack of time [11, 13, 15–17, 21, 23, 24, 34, 36, 37, 40, 43–46, 48–50, 52–54, 59, 61–63, 65, 66, 68–71, 74, 75] • Lack of time management [49, 50] • Scheduling incompatibility [39] <p>Safety and infrastructure</p> <ul style="list-style-type: none"> • Unsafe neighborhoods [41, 42, 75] • Lack of safe spaces [27, 35, 75] • Poor street lighting [73] • Safety issues [16] <p>Weather and climate factors</p> <ul style="list-style-type: none"> • Poor weather [13, 24, 47, 62, 70, 73, 77] • Climate unsuitable for exercise [43, 54]
Intrapersonal barriers [11, 13, 15, 17, 21, 23, 24, 34–40, 42–47, 49, 51–55, 59–61, 63, 64, 66–70, 72, 74, 75, 78–83]	<p>Motivational and volitional factors</p> <ul style="list-style-type: none"> • Lack of motivation [11, 13, 21, 34–37, 43–47, 52–54, 60, 61, 63, 64, 66, 68–70, 78] • lack of enjoyment [43, 46, 54, 70, 78] • Lack of willpower [40, 63, 70, 79] • Lack of self-discipline [21, 24] • Being lazy [37, 49] • Preference for sedentary activities [17] • insufficient self-control [23] • Boredom [15] <p>Physical and health-related factors</p> <ul style="list-style-type: none"> • Pain or physical discomfort [21, 61, 81, 83] • Lack of energy [35, 40, 75, 79] • Overweight/obese [51, 60, 72] • Poor self-rated health [51, 72] • Tiredness [15, 34] <p>Cognitive and emotional factors</p>

(Continues)

TABLE 2 | (Continued)

Theme	Subthemes	
Interpersonal and social barriers [13, 17, 22–24, 26, 27, 34, 37–39, 43–46, 48–50, 54, 57, 64, 67, 82, 84]	<ul style="list-style-type: none"> • Lack of knowledge [11, 37, 42, 46, 47, 54, 55, 59, 64, 70] • Lack of skill [40, 43, 46, 47, 54, 79] 	
	Role-related conflicts and identity	
	<ul style="list-style-type: none"> • Busy with work[37, 66, 68, 75, 78] • Busy lifestyle[47, 67, 80, 82] • Busy schedule due to school[68, 78] • Busy schedule[68, 74] 	
	Social support and influence	
	<ul style="list-style-type: none"> • Lack of social support [13, 23, 34, 37, 38, 43, 44, 46, 54, 82] • Lack of friends’ support [24, 43, 46, 54] • Peer influence [13, 38, 39, 50] • Lack of Family support[45, 57] • Lack of structured support [22, 64] • Lack of encouragement from family [37] • Family discouragement[48] 	
	Social dynamics and obligations	
	<ul style="list-style-type: none"> • Busy with family commitments[17, 37–39] • Social commitments [24, 49] • Obligations [17, 49] • Busy with house chores[37] 	
	Social norms and stigma	
	<ul style="list-style-type: none"> • Weight stigma [26, 27] • Discrimination [27] • Social pressures [50] • Family health values [84] • Family upbringing [67] • Family culture [22] 	
	Psychological and emotional barriers [11, 13, 15, 16, 26, 27, 37, 39, 40, 47, 60, 70, 74, 78–81, 83, 85]	Fear and anxiety-related barriers
		<ul style="list-style-type: none"> • Fear of injury [26, 37, 40, 47, 60, 70, 79, 81] • Fear of weight stigmatization [26, 27, 39, 85] • Pain-related fears [26, 81] • Fear of negative evaluation [26] • Fear of darkness [26]
		Emotional state
		<ul style="list-style-type: none"> • Stress [11, 16, 74, 78] • Low mood/mood disturbance [11, 15, 70] • Depressive symptoms [26, 80] • Embarrassment [47, 83]
		Low self-efficacy and self-perception
		<ul style="list-style-type: none"> • Lack of confidence [60, 78, 83] • Low self-esteem [13] • Negative self-perception [13]

(Continues)

TABLE 2 | (Continued)

Theme	Subthemes
Behavioral and lifestyle barriers [45, 47, 51, 52, 57, 60, 62, 66, 72, 74, 78, 80, 86]	<p>Sedentary behaviors</p> <ul style="list-style-type: none"> • Sedentary lifestyle [45, 52, 62, 66, 80] • Excessive computer use [52, 57, 80, 86] • TV time [52, 80] • Influence of social network [74] <p>Unhealthy habits</p> <ul style="list-style-type: none"> • Smoking [51, 60, 72, 80] • Unhealthy habits during social gatherings [45] <p>Activity and routine factors</p> <ul style="list-style-type: none"> • Lack of physical activity routines [47, 78] • Misclassification of activity levels [78]
Cultural and contextual barriers [13, 17, 38, 40, 43, 45, 74, 75, 78, 84]	<p>Cultural norms and beliefs</p> <ul style="list-style-type: none"> • Cultural practices and norms [45, 74] • Cultural limitations [43, 54, 84] • Cultural prioritization of work over exercise [75] • Cultural misconceptions [17] • Cultural beliefs [17] <p>Social and gender norms</p> <ul style="list-style-type: none"> • Gender stereotypes [13, 17, 38, 40, 78] • Social norms [17, 38, 45] • Pregnancy-related misconceptions [17]

Note: These items were retained as they align with our conceptual framework, which defines perceived barriers as obstacles originating from either internal states or external circumstances that individuals identify as hindering physical activity.

lower SES was associated with more frequent reporting of cost-related barriers [17, 39, 42, 44, 50–54] and limited facility availability [11, 35, 38, 45, 48, 55–61]. However, the operationalization of SES varied considerably across studies (e.g., income, education, and neighborhood deprivation), limiting direct comparability of findings.

Additionally, cultural norms were associated with differences in PA engagement patterns, as reported among Latina women who prioritized familial responsibilities over personal exercise [79] and among African American adolescents who described environmental and social constraints [57].

Taken together, while these patterns represent frequently observed associations in the reviewed literature, they should not be over-generalized due to the heterogeneity across studies. Interventions should be tailored to local demographic contexts, and future research would benefit from standardized demographic reporting to enable more robust cross-study comparisons.

7 | Discussion

This scoping review aimed to explore the perceptual barriers to PA among YLWOO aged 18–29 years. The findings reveal a

complex interplay of individual, social, environmental, and structural factors that hinder PA engagement. The frequency of each barrier and subcategory is presented in Table 2. The barriers identified were categorized into six main themes: environmental and structural barriers, intrapersonal barriers, interpersonal and social barriers, psychological and emotional barriers, behavioral and lifestyle barriers, and cultural and contextual barriers. Consistent with scoping review methodology, the findings presented here are purely descriptive and hypothesis-generating, not explanatory or causal.

7.1 | Environmental and Structural Barriers

The analysis identified environmental and structural barriers as the most frequently reported category of obstacles to PA participation. These were classified into four subcategories. Within this theme, “access to facilities, resources, and economic constraints” was the most frequently reported subcategory, evidenced by lack of access to exercise facilities, financial constraints, lack of facilities, and lack of a place to exercise. “Time constraints” was also frequently reported, primarily due to a lack of time. Other subcategories included “safety and infrastructure” (e.g., unsafe neighborhoods, lack of safe spaces) and “weather and climate factors” (e.g., poor weather).

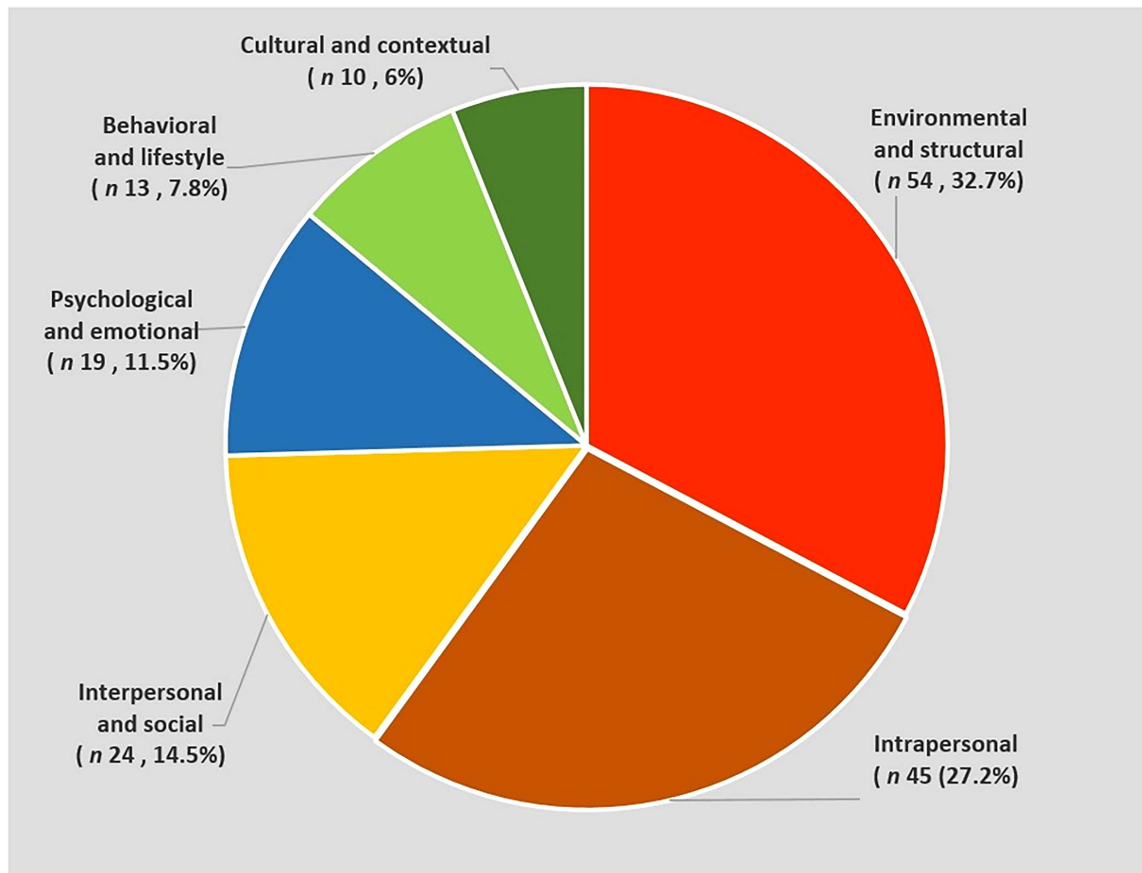


FIGURE 2 | Frequency of reported PA challenges (n = number of studies).

Lack of time and lack of access to exercise facilities were the most frequently reported specific barriers.

These findings align with earlier socio-ecological research. While “lack of time” was frequently reported in both, in the present review access and economic constraints were also frequently reported as a collective obstacle. In many low- and middle-income countries represented, the infrastructure for PA was often reported as absent or inaccessible. In contexts with established facilities, barriers such as “lack of time” or “lack of motivation” were more frequently reported. Additionally, varied settings (rural communities to urban developing economies) were associated with more frequent reports of “unsafe neighborhoods” and “poor infrastructure,” which were less prominent in earlier research. Thus, the ranking of frequently reported barriers differed by geographical and economic context [21].

7.2 | Intrapersonal Barriers

Analysis of the literature reveals intrapersonal barriers as the second most prevalent category of obstacles to PA engagement. These internal barriers can be categorized into four domains: motivational and volitional factors, physical and health-related factors, cognitive and emotional factors, and role-related conflicts and identity.

The most frequently reported challenge was motivational in nature, with lack of motivation as the most frequently reported

barrier, followed by lack of enjoyment and lack of willpower. Physical and health-related factors included pain or physical discomfort, lack of energy, and weight-related concerns. Cognitive and emotional factors were characterized by deficits in knowledge, followed by deficiencies in skill. The primary factor influencing role-related conflicts and identity was a pervasive sense of being “busy” (e.g., busy with work, busy lifestyle, demanding schedules). Motivational (24 occurrences) and knowledge-based (10 occurrences) barriers were among the most frequently reported.

These findings both align and diverge from existing systematic reviews. A motivational deficit was consistently reported as frequent. However, the frequency of “lack of knowledge” in the present review diverges from previous work, which reported pain, physical discomfort, and lack of time as more common than knowledge deficits [21]. Therefore, the key distinction is that while awareness of why to be active is often present, a critical gap remains in knowing how to be active effectively and safely, which our review highlights as a high-frequency barrier. This contrast underscores the need for public health messages to evolve from promoting general awareness to providing specific, actionable guidance [87].

7.3 | Interpersonal and Social Barriers

A third category identified in the literature comprises interpersonal and social barriers. These barriers manifest across three domains: inadequate social support and influence,

restrictive social dynamics and obligations, and adverse social norms and stigma.

The most frequently reported challenges were lack of social support, lack of friends' support, and peer influence. Being busy with family commitments, social commitments, and obligations was also reported. Social norms and stigma were also reported, including weight stigma, discrimination, social pressures, and familial influences. Social support deficits were reported in 10 occurrences.

While our data confirm a general deficit in social support as the primary barrier, prior reviews offer richer qualitative insight, linking it to specific factors like family obligations and societal judgment. Our analysis further identifies overt weight stigma as a less frequent but potent barrier. The evidence consistently underscores the need to build supportive social environments. However, a significant gap persists in evidence-based strategies for effectively addressing these social dimensions in practice [87, 88].

7.4 | Psychological and Emotional Barriers

Identified as the next principal category, psychological and emotional factors have been introduced in scientific texts as obstacles to PA engagement. These barriers may be categorized into three domains: fear and anxiety-related concerns, emotional state factors, and low self-efficacy and self-perception.

The most frequently reported challenges were fear-related (fear of injury, followed by fear of weight stigmatization). Regarding emotional state factors, stress and low mood were frequently reported. Regarding low self-efficacy and self-perception, lack of confidence was frequently reported.

Within the reviewed literature, fear of injury (eight occurrences) was the most frequently reported psychological barrier, followed by fear of weight stigmatization (four occurrences), stress-related impediments (four occurrences), and lack of confidence (three occurrences).

Fear-related barriers aligned with existing frameworks that recognize fear of injury, stigma, and pain as frequently reported obstacles [21]. A key distinction, however, lies in the scope; our findings represent a focused subset of a broader taxonomy. Previous work, encompassing a wider age range, has identified additional significant fears such as fear of falling, kinesiophobia (fear of movement), cardiac events, and crime, which are often more prevalent in middle-aged and older adults. This suggests that while we have captured the most frequently reported core fears, the full spectrum of activity-related apprehension is wider, incorporating barriers that may be more age-specific or under-investigated in certain cohorts, yet are nonetheless impactful [89].

These findings may suggest the potential value of integrated approaches addressing both safety perceptions and psychosocial well-being. The evidence highlights the potential benefit of combining exercise programming with psychological support to address these multidimensional barriers to PA participation.

7.5 | Behavioral and Lifestyle Barriers

The literature identifies behavioral and lifestyle barriers as another category of obstacles to PA engagement. These barriers can be classified into three domains: sedentary behaviors, unhealthy habits, and activity- and routine-related factors.

The most frequently reported challenges stemmed from sedentary behaviors (sedentary lifestyle and excessive computer use). Unhealthy habits were also reported, particularly smoking. Regarding activity routines, a lack of PA routines was reported.

Sedentary lifestyle (five occurrences), smoking (four occurrences), and excessive computer use (four occurrences) were among the most frequently reported barriers in this category.

For overweight and obese adults, sedentariness has been described as an active behavioral pattern rather than merely a lack of activity. A deficit of awareness concerning health risks may be a contributory factor; however, the behavior has been observed to endure as a lifestyle pattern even among informed individuals. Consequently, interventions targeting the disruption of sedentary patterns—for instance, through the integration of regular activity breaks and the alteration of prevailing social and environmental prompts—may offer a viable avenue for modifying such behavior [87, 90]. This study confirms previous research by demonstrating that “screen use” and “smoking” were the most frequently investigated behavioral determinants of PA, reinforcing their status as prominent lifestyle-related barriers [91].

7.6 | Cultural and Contextual Barriers

The sixth category of barriers identified through textual analysis is designated as “cultural and contextual barriers,” conceptualized within two domains: cultural norms and beliefs, and gender and social norms.

The most frequently reported challenges stemmed from cultural norms and beliefs, particularly cultural limitations. Gender stereotypes and social norms were also reported.

Gender stereotypes (five occurrences), cultural limitations (three occurrences), and social norms (three occurrences) were reported.

Our findings align with a recent scoping review, confirming that young women have a complicated relationship with PA, largely because they must constantly negotiate gender stereotypes [92]. Both analyzes note that gender norms are frequently cited as a barrier, as societal definitions of femininity often conflict with the perceived masculinity of sports and intense exercise. However, our review identified an additional dimension: cultural norms and beliefs—such as restrictive customs or the perception that work takes priority over exercise—were also frequently reported as a separate but related barrier. This suggests that while gendered social constructs limit young women's activity across settings, the manifestation and frequency of these barriers vary by local culture. This variation may explain why cultural limitations were more frequently reported in our review, given the diversity of populations included across the studies.

7.7 | BMI-Related Findings in Studies with Diverse BMI Participants

In studies that included participants with diverse BMI ranges, several unique findings emerged. For instance, YLWOO often reported higher levels of fear of injury and lack of skill compared to those with normal BMI [40]. Additionally, obese participants were more likely to cite weight stigma and discrimination as barriers to PA [27].

These findings suggest that YLWOO face additional psychological and social challenges that may not be as prevalent among those with lower BMIs. Furthermore, sedentary behaviors and lack of motivation were more frequently reported among this group, indicating a need for targeted interventions that address these specific barriers [52, 62, 80]. In contrast, studies with normal BMI participants often highlighted time constraints and lack of social support as primary barriers, suggesting that while some barriers are universal, others are more pronounced in specific BMI groups [34–36].

7.8 | Implications for Practice

The findings underscore the necessity for comprehensive, multi-level interventions that address the complex interplay of structural, psychological, social, and environmental barriers to PA engagement. Evidence suggests interventions should adopt an integrated approach combining individual-level strategies with community and policy modifications. At the individual level, programs should incorporate motivational enhancement techniques to improve self-efficacy, coupled with practical time-management strategies to address scheduling constraints. Community-level interventions must prioritize improving access to safe, affordable facilities while fostering inclusive social environments. Culturally adaptive approaches are essential to challenge restrictive gender norms and cultural practices, alongside behavior modification strategies targeting sedentary lifestyles.

Finally, these findings give practitioners and the health system a clear starting point. Instead of just advising “lose weight,” they can now work together to help YLWOO overcome the specific obstacles—like lack of time or motivation—that stand in their way.

7.9 | Strengths and Limitations

This scoping review represents the first systematic examination of perceptual barriers to PA specifically focused on YLWOO aged 18–29 years with a body mass index (BMI) of 25 kg/m² or higher. Conducted according to the Joanna Briggs Institute (JBI) methodology [32] and reported in line with PRISMA-ScR guidelines [93]. It provides a conceptual framework for perceived barriers that incorporates both intrapersonal (including mental) and external domains. In addition to proposing a novel classification system, this study has quantified the frequency of barriers within each subcategory. The resulting framework can serve as a roadmap for practitioners and interventionists, enabling them to prioritize the most prevalent dimensions and subcategories in the design of PA behavior interventions. One

restriction of this study is the inclusion of some studies with participants outside the primary age range, though these were only incorporated where the reported barriers were deemed relevant. Another restriction is the reliance on self-reported data in some studies, which may introduce measurement biases such as recall inaccuracy and social desirability effects.

8 | Conclusion

This scoping review supports the global public health goal of addressing physical inactivity, a key modifiable risk factor for NCDs. It represents the first comprehensive effort to systematically map perceived barriers to PA among YLWOO. We identified primary thematic categories in six categories of environmental and structural, intrapersonal, interpersonal and social, psychological and emotional, behavioral and lifestyle, and cultural and contextual. The analysis also reveals that environmental and structural barriers are among the most pervasive, underscoring a critical need for policymakers to prioritize these areas. As a result, this mapping will inform future research by highlighting under-investigated areas, such as cultural and contextual barriers, and guide the development of tailored, multi-level strategies to promote PA in this specific population.

Author Contributions

Behnam Bagherzadeh: investigation, writing – original draft, writing – review and editing, methodology, software, data curation, resources, formal analysis. **Neda Kabiri:** methodology, writing – original draft, formal analysis, investigation, visualization, validation. **Manoj Sharma:** validation, supervision, writing – review and editing. **Hamid Allahverdipour:** supervision, conceptualization, formal analysis, project administration, funding acquisition.

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Ethics Statement

This study was conducted as part of a doctoral research project and complies with the ethical guidelines approved by the Ethics Committee of Tabriz University of Medical Sciences, Tabriz, Iran (ethical approval code: IR. TBZMED. REC.1403.646), pertaining to the entire thesis.

Consent

The authors consent to the publication of this manuscript.

Conflicts of Interest

The authors declare that they have no competing financial or non-financial interests in this work. Furthermore, Tabriz University of Medical Sciences had no involvement in the study design, execution, or publication and derived no benefit from this research.

Data Availability Statement

The data that supports the findings of this study are available in the supporting material of this article.

Transparency Statement

The corresponding author, Hamid Allahverdipour, affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.

Supporting File 1: hsr272719-sup-0001-supplementary_file_1.docx.

Supporting File 2: hsr272719-sup-0002-supplementary_file_2.docx.