



Barriers and Facilitators to Physical Activity in Urban Parks Among Saudi Women with Chronic Diseases: A Qualitative Study

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Abstract Physical activity is critical for preventing and managing chronic diseases, which are highly prevalent among Saudi women. Despite national investments in public parks to promote active lifestyles, little is known about the factors that support or hinder women with chronic diseases from engaging in park-based physical activity. This study explored the barriers and facilitators that influence physical activity participation in local parks among this population. A qualitative design using gender-specific focus groups was employed. Discussions were audio-recorded, transcribed and analysed using thematic analysis, with the Social-Ecological Model guiding data interpretation. A total of nineteen women (n = 19) aged 41-68 years participated in four focus groups (n = 4). All participants had at least one chronic condition (i.e., diabetes, hypertension, and/or heart disease). The identified barriers included fatigue, disruptions from children's play, safety concerns and lack of cleanliness and maintenance. Facilitators included perceived health benefits, the affordability of parks, the ability to integrate physical activity with family responsibilities, a sense of community, cultural acceptability, healthcare professionals' advice, natural surroundings and the availability of amenities. These multi-level factors influencing physical activity offer valuable insights for designing culturally appropriate, community-based strategies to support active living among Saudi women with chronic health conditions.

Key Words Chronic Disease, Physical Activity, Barriers, Environment, Female, Urban Parks

INTRODUCTION

Chronic diseases such as diabetes, hypertension and heart diseases represent a serious public health challenge in Saudi Arabia [1]. Approximately one in five Saudi adults is affected by a chronic disease, with higher prevalence rates observed among women than men [2]. For example, diabetes affects 24.8% of women compared with 20.3% of men, while hypertension affects 19.5% of women compared with 15% of men [2]. These statistics, especially among women highlight the substantial burden that chronic diseases place on the Saudi healthcare system, emphasizing the need for effective prevention and management strategies.

Promoting physical activity is a crucial strategy for both the prevention and management of chronic diseases [3]. Regular physical activity reduces the risk of developing conditions such as cardiovascular disease and type 2 diabetes [4–7]. It also supports disease management by improving body weight, blood pressure, glucose levels, lipid profiles, sleep quality and overall quality of life [8–9]. However, despite the benefits of

physical activity, many Saudi adults, particularly female, remain physically inactive [10,11].

According to the General Authority for Statistics in Saudi Arabia, only 20.3% of Saudi women achieve the recommended 150 minutes of physical activity per week [10]. Participation rates remain low among women with chronic diseases [11]. For example, a study found that only 26.3% of women with diabetes met the recommended levels of physical activity [11].

The causes of physical inactivity among Saudi women have been examined in several studies, which consistently identify factors such as the lack of gender-specific facilities, car-dependent urban design, high gym costs, limited safe walking paths and extreme temperatures [11,12–14]. In response to these barriers, Saudi Arabia has invested in developing local public parks to promote physical activity [15].

Local parks provide readily available spaces for physical activity within residential areas [16]. Previous studies showed that Physical activity in local parks improve

a wide range of health-related outcomes [17]. In addition, local parks provide benefits beyond physiological health, such as supporting mental well-being and a stronger sense of community [18,19]. However, to effectively promote park-based physical activity among women with chronic diseases, it is essential to understand the factor that influence their engagement in these settings.

To date, no study has specifically examined the factors that influence physical activity participation in local parks among women with chronic conditions in Saudi Arabia. Understanding these factors can support health professionals in providing more relevant and practical guidance, tailored to the needs of Saudi women managing chronic conditions. Additionally, the findings can inform urban planners and community organizations in designing and maintaining accessible, culturally appropriate parks that promote physical activity and well-being. Therefore, this study aimed to explore the barriers and facilitators influencing park-based physical activity among Saudi women with chronic diseases.

METHODS

Study Design

A qualitative approach using gender-specific focus groups was employed. Focus group interviews involve discussions with small groups of 4–5 participants, allowing participants to collectively build upon each other's comments, fostering insightful and interactive discussions [20]. This dynamic process facilitates a comprehensive examination of the topics under study.

Participant Recruitment

Participants were recruited from three purposefully selected urban parks in Tabuk, Saudi Arabia. These parks were chosen to represent different geographic areas of the city. Recruitment was conducted through different strategies, including posting study flyers in selected parks, approaching potential participants during park visits, contacting eligible individuals through local community networks and snowball sampling whereby enrolled participants referred other eligible participants.

To be eligible, participants were required to be a Saudi women aged 18 years or older, visiting local parks regularly and having at least one chronic condition, such as diabetes, hypertension or cardiovascular disease. Exclusion criteria were children, adults without chronic diseases or those who did not regularly visit local parks. Purposive sampling was used to recruit participants across different age groups and with a range of chronic conditions. This was mainly to ensure the inclusion of diverse perspectives within each focus group.

Focus Groups Procedure and Data Collection

All participants who provided informed consent were invited to gender specific focus groups. Prior to the interview, the moderator introduced themselves and explained the purpose of the study. Participants were then asked to complete a brief survey to collect socio-demographic information, including age, employment status, educational level and self-reported health conditions.

Table 1: Interview Guide

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| <ul style="list-style-type: none"> • When considering your health, how important is it for you to engage in physical activity? • What is your general opinion about being physically activity in local parks? (prompt: comparison to other forms of exercise (like in the health/sport clubs)? • What factors facilitate physical exercise or activity in local parks? Prompt on different influencers at different levels • what are the barriers of physical activity or exercise in local parks? Prompt on different influencers at different levels • What are the factors of local parks in your city that may affect your physical exercise/ physical activity negatively or/and positively)? |
|--|

Each focus group discussion was facilitated by a female moderator (BF) and lasted approximately 45 minutes. The moderator used a semi-structured interview guide involving open-end questions to steer the discussion. The interview guide was created based on the study's objectives, informed by relevant literature [21–23] and refined through discussions between the two researchers who had backgrounds in either ecology or physical therapy (see Table 1). A moderator assistant was available to help with notetaking. All focus group discussions were conducted in convenient locations within local community centres and were held in Arabic, the participants' native language.

Data Analysis

The focus group discussions were audio-recorded with the participants' consent and then transcribed verbatim. Any personal identifiers were removed from the transcripts. The data were then analysed using thematic analysis as explained by Bruan and Clarke [24]. This involved six phases including familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the final report [24].

Two researchers independently conducted the coding process to enhance analytical rigor. The first researcher (HF) holds a PhD in physical therapy, while the second researcher (BF) holds a PhD in ecology. Coding was then compared to identify similarities and differences. Discrepancies were discussed until consensus was reached. Similar codes were subsequently grouped into sub-themes, which were then organized into broader themes. These themes were reviewed, refined and agreed upon collaboratively to ensure consistency, credibility and accurate representation of participants' perspectives.

The Social-ecological model was used as a theoretical framework to guide data synthesis and interpretation [25,26]. This model allows for a deeper analysis of factors influencing physical activity behaviour as it identifies multilevel factors of influence within personal, social and environmental domains [25,26]. Furthermore, the application of this model can shed light on the complex interplay of these factors, ultimately guiding the development of targeted interventions [26]. Focus groups materials were translated into English using two-way process of translation by two translators who were fluent in both English and Arabic. These translators were not involved in the study in any other way.

Ethics

Approval to conduct the study was granted by the local Research Ethics Committee at the University of Tabuk, Saudi Arabia [REC REF: UT-224-75-2022] and informed written consent was obtained from all participants.

RESULTS

Participants Characteristics

A total of 19 participants participated in four focus groups. Three focus groups included five participants each, while one focus group included four participants. All participants were women, aged 41 to 68 years, with at least one chronic condition including diabetes, hypertension, osteoarthritis and or cardiovascular disease. The characteristics of these participants are summarized in Table 2.

Themes Overview

After data analysis, three main themes emerged from the focus group discussions: personal level factors, social and family level factors and community/environmental level factors. Each theme comprised several sub-themes that functioned as either facilitators or barriers to participation in physical activity in local parks (Table 3). Under the theme personal level factors, perceived health benefits and affordability were identified as facilitators, while fatigue emerged as a barrier. Under the theme social and family level factors, a sense of community and belonging and the ability to integrate physical activity with family responsibilities were identified as facilitators, whereas disruptions related to children's play were reported as a barrier. Under the theme community/environmental level factors, facilitators included the cultural acceptability of parks as venues for physical activity, advice from healthcare professionals, natural surroundings and the availability of amenities, while safety concerns and lack of cleanliness and maintenance were identified as barriers. Figure 1 illustrates the relationship between these factors and the social-ecological model. Detailed descriptions of each theme and sub-theme, supported by representative participant quotations, are presented below.

Theme One

Personal Level Factors: This theme encompasses factors related to individual characteristics, beliefs and health status that influence participation in physical activity. Under this theme, three sub-themes were identified: Attitude toward and belief of physical activity and affordability as facilitators and fatigue as a barrier.

Attitude toward and Belief of Physical Activity

Participants' attitudes and beliefs about the role of physical activity in managing chronic conditions emerged as an important personal-level facilitator. In the current study participants believed that regular physical activity was essential for managing their chronic conditions. They recognized the therapeutic benefits of physical activity, particularly in reducing symptoms such as high glucose level, blood pressure, stress, sleep quality and obesity.

"Physical activity is like a medicine for me" (Participants 5)

Affordability of Local Parks

Participants identified the affordability of local parks as a major facilitating factor. They compared local parks to gyms and highlighted that parks typically provide walking paths, sports courts and in some cases, free outdoor exercise equipment which are all accessible at no cost.

"Everything I need to stay active is in the park and it doesn't cost me a riyal." (Participants 3)

Fatigue

Fatigue emerged as a common barrier that limited participants' ability to engage in physical activity in local parks. Participants described feeling too exhausted to exercise regularly. They attributed this fatigue to work demands, symptoms of their chronic conditions and the general pressures of daily life.

"It's not that I don't want to be active, it's just that my body feels too tired some days, may be! you know, because my blood pressure" (Participants 17)

"I would love to come to the park more often, but with my job I just don't have the time. I'm exhausted by the end of the day." (Participants 9)

Table 2: Participants characteristics

Age (mean ± SD)	52 ± 8
Gender, n (%)	Female, 19 (100%)
Level of education, n (%)	University level, 11 (58%); Secondary or lower= 8 (42%)
Employment, n (%)	Employed, 6 (32%); Housewife or retired, 13 (78%)
Chronic diseases, n (%)	Diabetes, 10 (53%); Diabetes and Hypertension 5 (26%); Diabetes, Hypertension & heart disease, n= 4 (21%)

Table 3: Classification of sub-themes as facilitators and barriers to park-based physical activity across social-ecological model levels

Themes/ social-ecological level	Sub-Themes classified as barriers or facilitators	
	Facilitators	Barriers
Personal level factors	<ul style="list-style-type: none"> Beliefs about the role of physical activity in chronic diseases management Affordability of local parks 	<ul style="list-style-type: none"> Fatigue
Social and family level factors	<ul style="list-style-type: none"> Integrating family responsibilities with physical activity in Parks Sense of community and belonging 	<ul style="list-style-type: none"> Disruptions from Children's Play
Community/ environmental level factors	<ul style="list-style-type: none"> Culturally accepted venue for physical activity Healthcare professional advice Natural scene Availability of amenities 	<ul style="list-style-type: none"> Safety concerns Lack of Cleanliness and Maintenance

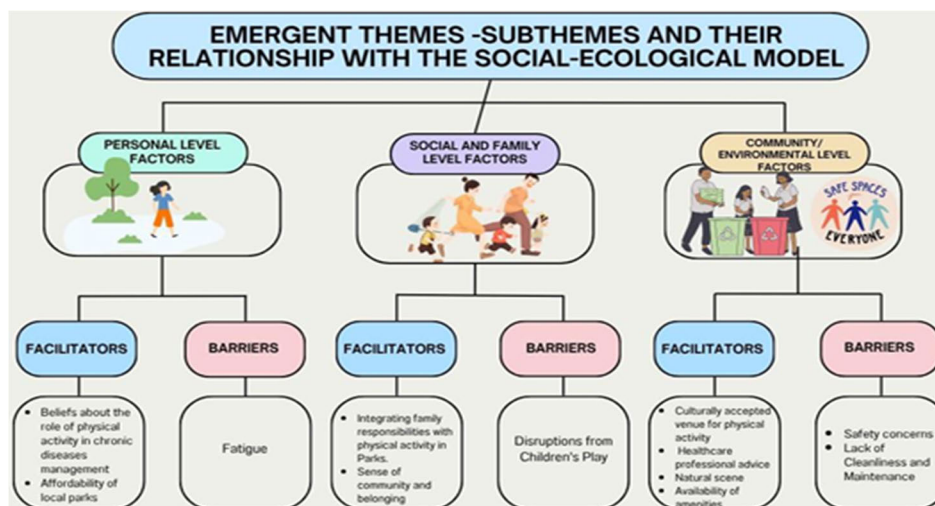


Figure 1: Facilitators and barriers mapped across levels of the social-ecological model

Theme Two

Social and Family Level Factors: This theme highlights how social and family dynamics influence the ability of Saudi women with chronic conditions to engage in physical activity within park settings. Three sub-themes emerged within this theme: a sense of community and belonging and the ability to integrate physical activity with family responsibilities were identified as facilitators, whereas disruptions related to children's play were reported as a barrier.

Integrating Family Responsibilities with Physical Activity in Parks

The ability to combine physical activity with family responsibilities emerged as an important motivator for participants. They explained that local parks helped them stay active while still meeting their family obligations. Participants felt that parks made it easier to fit physical activity into their daily routines without neglecting household or caregiving duties. Many shared that they could seamlessly incorporate exercise into family outings, making being active feel natural rather than competing with family time. The close proximity of parks further supported this balance by allowing them to take a quick walk and return home promptly, with minimal disruption to their responsibilities.

“Going to the park doesn't take much time, so I don't feel like I'm neglecting my family” (Participants 13)

Sense of Community and Belonging

The sense of community and belonging was a major motivator for physical activity. Participants expressed a deep appreciation for the social aspect of being physically active in local parks. Many shared that they regularly meet relatives, neighbours and friends at the park, creating enjoyable and supportive environment. This sense of community made their park visits more enjoyable and encouraged them to stay active.

“It's great to come to the park and see familiar faces. We can chat, walk together and encourage one another.” (Participants 9)

Disruptions from Children's Play

Some participants shared that the presence of large groups of young children in the parks made it harder for them to enjoy physical activity. They explained that children often use the walking paths to ride scooters and bicycles, which created obstacles for other park visitors. Additionally, the noise and energy of these groups sometimes disrupted the peaceful atmosphere, making it difficult for participants to fully enjoy their walks and focus on their physical activity.

“I don't like it [the park] when there are too many kids in the park. They ride their scooters and bikes on the paths, making it hard for me to walk” (Participants 4)

Theme Three

Community/Environmental Factors: This theme encompasses factors related to the built environment, services, cultural context and institutional influences that shape participation in physical activity in local parks from the participants' perspectives. Seven sub-themes were identified within this theme. The sub-themes of cultural acceptability of parks as venues for physical activity, advice from healthcare professionals, natural surroundings and availability of amenities acted as facilitators. In contrast, the sub-themes of safety concerns, lack of cleanliness and inadequate maintenance of park facilities acted as barriers to participation in physical activity.

Being Culturally Accepted Venue for Physical Activity

Classifying local parks as culturally accepted spaces for physical activity was a key motivator identified in this study. Participants highlighted that, historically, societal norms often confined women to domestic roles, limiting their opportunities for physical activity and being outside houses. However, as more women have begun to use parks for

walking, these spaces have transformed to align with cultural expectations, offering welcoming environments where women can feel comfortable staying active.

“I feel comfortable walking in the park because many other women are doing the same... you know it feels okay no one would judge you.” (Participants 8)

Healthcare Professional Advice

Many participants expressed that guidance from healthcare professionals significantly encouraged them to regularly perform physical activity in local parks. They reported that their doctors not only encouraged them to be physically active but often specifically recommended local parks as ideal venues for physical activity. For example, one participant shared.

“The doctor said I do not need a gym... just walking in the park is enough for my health.” (Participants 15)

Natural Scene

The natural surroundings in local parks were a facilitator factor for physical activity in the current study. Participants expressed a deep appreciation for open spaces, greenery, fresh air and scenic views. These elements created a welcoming atmosphere that made physical activity feel more enjoyable. Many participants described the park environment as calming and refreshing, providing a peaceful escape from the stresses of daily life. This connection to nature served as a strong motivator, encouraging them to engage in physical activity regularly.

“The fresh air and the greenery make such a big difference. I actually look forward to walking every day because it feels peaceful and refreshing.” (Participants 1)

Availability of Amenities

The availability of amenities such as restrooms, children’s playgrounds, sports courts and outdoor gyms was identified as a significant facilitator of physical activity in local parks. Participants emphasized that these facilities enhance the overall park experience. For example, the presence of restrooms encourages them to stay longer, while the availability of children’s playgrounds allows parents to engage their kids in active play.

“Knowing there is a place for my children to play gives me peace of mind. I can walk while they have fun.” (Participants 19)

“Having restrooms nearby makes it so much easier to enjoy our time at the park. I can stay longer without worrying about finding a place to go” (Participants 5)

Safety Concerns

Some participants raised concerns about safety in local parks, which influenced their willingness to be physically active. One source of concern was accessing the parks when they were located near busy roads or intersections, as

crossing these areas caused anxiety. Another major concern was the presence of wild or stray dogs within the parks, which made participants feel unsafe, especially when walking alone. These safety issues created a sense of unease and discouraged many from visiting the parks or engaging in physical activity there.

“It’s scary to think about encountering a dog, especially if I have my kids with me.” (Participants 19)

“My house is just on the other side of that big intersection. I don’t feel safe trying to cross over here, especially with my bad knees.” (Participants 16)

Lack of Cleanliness and Maintenance

Participants identified the lack of cleanliness and maintenance in local parks as a barrier to engaging in physical activity. They reported that littered areas and poorly maintained facilities made the parks less appealing and, in some cases, unpleasant to use.

“It’s hard to enjoy walking when the park is full of litter” (Participants 13)

DISCUSSION

This study examined facilitators and barriers to physical activity in local urban parks from the perspective of Saudi women with chronic diseases. The analysis was guided by the social-ecological framework. This approach enabled identification of influences at the individual level, the social and family level and the community and environmental level.

At the individual level, three key factors influenced physical activity participation in local parks: two facilitators and one barrier. Notably, in contrast to a recent study that reported financial cost as a barrier to physical activity [27], participants in the current study perceived the low-cost nature of parks as a facilitator. The absence of membership fees and other expenses typically associated with gym use made local parks a practical and accessible option. In addition, perceived health benefits emerged as significant facilitators of physical activity participation. This finding aligns with evidence showing that awareness of these benefits is a primary driver of engagement among individuals with chronic conditions [28].

On the other hand, fatigue was the only barrier at the individual level in the current study. Participants described feeling too exhausted to engage in regular exercise. They attributed this fatigue to the physical burden of their health conditions, work responsibilities and daily demands. This symptom is common in many chronic diseases and has been linked to reduced motivation and lower levels of physical activity [29,30]. As such, future physical activity interventions should consider energy limitations and the fluctuating nature of chronic disease symptoms.

At the social and family level, the study identified two facilitators and one barrier to participation in physical activity in local parks. A notable facilitator was the ability to

integrate family responsibilities with physical activity, which contrasts with a previous study that reported family obligations as a barrier to engagement in physical activity [31]. In this study, participants reported that local parks allowed them to remain physically active without neglecting their caregiving roles. The proximity of parks made it easier for women to incorporate physical activity into their daily routines and reduced time-related constraints.

Another facilitator was the sense of community and belonging experienced by participants in local parks. Many described how social interactions with family, friends and neighbours in park settings encouraged them to visit parks regularly and remain physically active. This finding aligns with previous research [32]. For example, Carter *et al.* (2021) reported that social support is a strong facilitator of physical activity, as individuals are more likely to engage in regular physical activity when they feel part of a supportive community [32].

However, the presence of large groups of young children in the parks was identified as a barrier to physical activity. Participants explained that the noise and activity generated by these groups, particularly when children rode scooters and bicycles on walking paths, disrupted their ability to engage comfortably in physical activity. This finding aligns with previous research highlighting the negative effects of crowded or noisy environments on physical activity participation [33,34]. For many people, especially those seeking quieter spaces, the commotion in parks detracts from the overall experience [33,34]. While the presence of children supports family engagement, it can create obstacles when park design does not adequately accommodate the diverse needs of all users. Addressing this challenge may require designated play areas for children or improved spatial organization within parks to ensure that spaces remain accessible and supportive of physical activity for different user groups.

At the community and environmental level, the study identified several facilitators and barriers to physical activity in local parks for Saudi women with chronic conditions. One notable finding was that local parks now provide women with opportunities to engage in physical activity outside the home within a culturally acceptable environment. Historically, cultural expectations in many societies, including Saudi Arabia, have restricted women's roles to the domestic sphere and limited their access to outdoor spaces for physical activity [12,35]. As local parks have become more accessible, they now offer supportive settings that enable women to engage in physical activity without concerns about societal judgment or stigma.

Another key facilitator was advice from healthcare professionals. This finding aligns with existing literature highlighting the importance of healthcare providers in motivating individuals to adopt healthier behaviours [35–37]. Research suggests that direct recommendations from physicians increase the likelihood of participation in physical activity [36–37]. Integrating healthcare advice with community resources may support participation in physical activity and improve health outcomes.

Another significant facilitator identified was the natural environment of the parks. Participants in the current study appreciated natural features such as open spaces, greenery, fresh air and scenic views, which created an inviting and calming atmosphere. Previous studies have shown that physical activity in open spaces is beneficial and provides a peaceful escape from the stresses of daily life [18,19].

The availability of amenities in local parks also emerged as a facilitator of physical activity. Participants highlighted that features such as restrooms, exercise stations and children's playgrounds made parks more accessible and supportive of regular use. The presence of these amenities encouraged longer visits and more consistent participation in physical activity [18,19].

Despite these facilitators, several barriers at the community and environmental level limited participation in physical activity in local parks. Safety concerns were prominent and included the presence of wild dogs, proximity to busy roads and the lack of safe crossings or pedestrian pathways near parks. Similar findings have been reported in other countries, where exposure to traffic and stray animals reduces willingness to engage in physical activity [38,39]. Addressing these concerns requires infrastructure improvements such as designated pedestrian pathways, fencing to prevent animal access and enhanced security measures [38,39].

Another barrier was the lack of cleanliness and maintenance in some parks. Participants reported that litter, broken equipment and poorly maintained restrooms discouraged park use. Another barrier was the lack of cleanliness and maintenance in some parks. Participants reported that litter, broken equipment and poorly maintained restrooms discouraged park use. This finding echoes the work of Veitch *et al.* (2025), who found that the aesthetic quality and cleanliness of public spaces are critical factors influencing park usage [40].

CONCLUSIONS

This study explored the multi-level factors influencing physical activity participation in local parks among Saudi women with chronic diseases. Barriers such as fatigue, safety concerns and poor park maintenance were found to limit participation. In contrast, facilitators including affordability, cultural acceptance, family support and a welcoming environment encouraged physical activity. These findings emphasize the need for culturally appropriate, accessible and well-maintained parks, supported by healthcare initiatives, to promote active lifestyles and better manage chronic conditions.

Recommendations

Improving the quality and accessibility of local parks may enhance participation in physical activity among women with chronic conditions. Regular maintenance, effective waste management and measures to control wild dogs and insects are important to ensure safe and supportive park environments. Infrastructure improvements such as

designated pedestrian pathways, appropriate fencing and clearly defined activity zones can further promote safe use of park spaces. Providing adequate amenities and preserving natural features may also encourage regular engagement in park-based physical activity. In addition, integrating healthcare advice with community-based resources may support sustained participation in physical activity among women with chronic conditions.

Strengths and Limitations

To the best of our knowledge, this study is the first to explore physical activity in local parks in Saudi Arabia through the lens of the Social-Ecological Model. This approach provided a comprehensive understanding of the multi-level influences shaping engagement in physical activity. However, several limitations should be acknowledged. First, the sample included only female participants, which limits the generalizability of the findings to men, who may experience different barriers and facilitators. Second, the relatively small number of participants and focus groups may have limited the range of perspectives captured and data saturation may not have been fully achieved despite supporting in-depth exploration of participants' experiences. Third, participants were recruited from a single city, which may limit the transferability of the findings to women living in other regions with different environmental or cultural contexts. Fourth, eligibility for participation was based on self-reported chronic disease status rather than clinical verification, which may have introduced some misclassification. Finally, the study reflects participants' experiences at a single point in time and does not capture potential changes in perceptions or behaviours over longer periods. Taken together, these factors may limit the broader generalizability of the findings beyond the study setting.

Ethical Statement

Data "The study was conducted in accordance with the Declaration of Helsinki and approved by the local Research Ethics Committee at the University of Tabuk, Saudi Arabia [REC REF: UT-224-75-2022]. Informed written consent was obtained from all participants.

Data Availability

The data in this article are not readily available due to ethical and participants privacy considerations. Requests to access the datasets should be directed to the corresponding author.

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