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Physical activity policies in Saudi Arabia and Oman: a qualitative study using stakeholder interviews

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Abstract

Background Countries in the Middle East have some of the lowest rates of physical activity and some of the highest rates of obesity in the world. Policies can influence population levels of physical activity. However, there is a dearth of research on physical activity policies in the Gulf region. This qualitative study analyses cross-sectoral barriers and facilitators for the development, implementation and evaluation of physical activity policies in Saudi Arabia and Oman, two of the largest countries in the region.

Methods Semi-structured interviews were conducted with 19 senior policymakers from the Ministries of Health, Education, and Sport in Saudi Arabia and Oman, and were examined using thematic analysis.

Results We identified seven themes related to physical activity policies in Saudi Arabia and Oman: leadership; existing policies; physical activity programs related to policies; private sector policies; challenges; data/monitoring; and future opportunities. Both countries have a central document that guides policy-makers in promoting physical activity, and the available policies in both countries are implemented via multiple programs and initiatives to increase physical activity. Compared with Oman, in Saudi Arabia, programs from the non-profit sector, represented by community groups, play a more significant role in promoting physical activity outside the government framework. The private sector has contributed to promoting physical activity in both countries, but interviewees stated that more financial support is required. Policy limitations differ between Saudi Arabia and Oman: intersectoral collaboration in Oman is limited and mainly based on individuals' own initiative, while the health transformation in Saudi Arabia tends to slow down policy implementation in relevant areas. Physical education in Saudi Arabia and Oman is similar; however, increased support and collaboration between government agencies and the private sector for out-of-school sports academies are needed.

Conclusions This study addresses key gaps in analysing physical activity policies in Gulf Cooperation Council countries. Our study highlights the importance of increasing financial support, improving collaboration between governmental agencies and between them and the private sector and consolidating efforts to back physical activity policies and dismantle cross-sectoral barriers in Saudi Arabia and Oman. Educational institutions in Saudi Arabia and Oman play a crucial role in promoting physical activity from early childhood to young adults. Our insights assist policy-makers, public health officials and stakeholders in shaping effective physical activity-promoting policies, programs and interventions to prevent non-communicable diseases. Challenges identified in Saudi Arabia and Oman's policies will inform their future development.

Keywords Physical activity, Health policy, Saudi Arabia, Oman, Gulf region

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Background

Despite the health benefits of physical activity [1–3], in most countries, large proportions of the population remain insufficiently active [4, 5]. In line with social-ecological models of health [6], the need for policies to increase population levels of physical activity has been highlighted [7, 8]. Physical activity policy is defined as any formal or informal legislative or regulatory action or organized guidance provided by governments and organizations [9–12]. Policies can be cross-sectoral and encompass access to various forms of physical activity, including walking and cycling, regulate and promote programs and initiatives, and provide a comprehensive framework for the design, funding and implementation of diverse physical activity interventions [9, 13, 14].

Countries in the Middle East have amongst the lowest levels of physical activity and some of the highest rates of overweight and obesity in the world [4, 15]. In Saudi Arabia and Oman, only 29.7% and 25.6% of the adult population, respectively, meet the physical activity recommendations. For the Middle East and North Africa (MENA) region the rate is 38.5% and the global average is 31.3% [4]. Moreover, in 2020 in Oman, Qatar, Bahrain, Kuwait and the United Arab Emirates, more than 80% of teenagers and 55% of adults (45% of men and 65% of women) were not sufficiently active [16]. In Saudi Arabia and Oman, dietary patterns are shifting due to increased consumption of processed foods, leading to higher rates of obesity, diabetes and cardiovascular diseases. Traditional diets rich in fruits, vegetables and lean meats are being replaced by fast food and sugary drinks. Moreover, reduced physical activity and increasingly sedentary lifestyles are major determinants of the obesity epidemic [17, 18]. Therefore, there is an urgent need in this region for action on physical activity, including policy development, implementation and evaluation.

The 2014 report from the WHO Regional Office for the Eastern Mediterranean on promoting physical activity in the region included a policy mapping exercise on national policy and action on physical activity in all 22 member states [19]. National physical activity policies were reported for most countries, including all members of the Gulf Cooperation Council (GCC), a political and economic alliance of six Middle Eastern countries [Saudi Arabia, Kuwait, the United Arab Emirates (UAE), Qatar, Bahrain and Oman] that share a similar cultural, social and economic background. According to WHO's recent *Global Status Report on Physical Activity* [16], only 11 of the 22 countries in the Eastern Mediterranean Region had a national physical activity strategy, while all GCC countries had one. The report also identified some partnerships to promote physical activity between

various ministries in the Gulf states, particularly across the health, sports and education sectors.

In a systematic scoping review, Klepac Pogrmilovic et al. examined the academic literature on physical activity policy and identified 163 papers, covering 168 countries, including all 6 GCC members [20]. Few papers on physical activity policy across the Eastern Mediterranean region were identified, thus, the findings for the region were largely based on the 2014 report of the WHO Regional Office [20]. In another study by Klepac Pogrmilovic and colleagues, a survey on national physical activity policies was completed by representatives of 76 countries. However, this only included three of the 22 countries from the Eastern Mediterranean Region. The authors also emphasized that although national policies and strategies exist in all GCC countries, implementation is lacking. The authors recommended that further research be undertaken into physical activity and sedentary behaviour policy in the region [8]. It is essential to contextualize these findings with regard to physical activity policies in the Gulf region, including disparities and challenges in their implementation.

Recently, Albululaya et al. analysed physical activity policy initiatives in Saudi Arabia by conducting semi-structured interviews with three policy-makers from the Ministries of Education and Sports and with six Saudi academics working in this field [21]. Surprisingly, they did not interview anyone from the Ministry of Health. They concluded that while physical activity amongst Saudis overall has increased, levels among women are still low. While Albululaya et al. analysed aspects of physical activity policy development, implementation and evaluation in Saudi Arabia, they did not address potential cross-sectoral barriers and facilitators for these processes.

The primary objective of the present study was to analyse cross-sectoral barriers and facilitators for physical activity policy development, implementation and evaluation in GCC countries. The best research paradigm for this study is qualitative research. We chose interpretivist research to describe complex social realities, explore new or under-researched subjects and generate hypotheses for future quantitative research. This approach allows for a detailed examination of phenomena, which is difficult with quantitative methods. Practically, we also lacked a large, easily accessible sample to survey quantitatively. Therefore, interpretivism is particularly effective for understanding stakeholder perspectives on physical activity policies in unique cultural settings, such as those in Saudi Arabia and Oman, providing deep insights into subjective experiences and nuanced views. To achieve this, we interviewed policy-makers from the Ministries of Health, Sport and Education in Saudi Arabia and Oman,

the two largest countries in the GCC. We picked these three ministries as previous research highlights that they are chiefly responsible for promoting physical activity and implementing related policies in the Gulf region [22–24].

Methods

Study design

This is a qualitative study using the interpretivist research paradigm [25], comprising semi-structured interviews with key stakeholders in physical activity policy-making in Saudi Arabia and Oman. We utilized the COREQ checklist to ensure the rigour and transparency of our qualitative methods (Appendix 1).

Sampling and recruitment

We defined stakeholders as those that are directly involved in the development, implementation and evaluation of physical activity policies. We initially sought to conduct interviews with stakeholders in all six GCC countries. We attempted to reach a contact in the Ministry of Health (MoH) in each GCC country by writing to the official email address of the ministries to introduce the study and request the contact details of relevant stakeholders. Despite following up with non-responders, we did not receive any replies from Qatar, Bahrain, Kuwait and the United Arab Emirates. Therefore, we narrowed the scope to Saudi Arabia and Oman, the two largest countries of the six, with 36.4 million and 4.6 million inhabitants, respectively, accounting for 70% of the GCC's population [26]. After obtaining contact details of key stakeholders from the ministries, the participants were contacted directly via email or telephone. To recruit additional participants, we used snowball sampling by asking interviewees to provide contact details of other relevant stakeholders in their organization. Because of the documented previous involvement of the sports and education sectors in promoting physical activity in the Gulf States [19], we also asked participants to identify relevant stakeholders in the Ministries of Sports and Education in Saudi Arabia and Oman. Our study focussed on the Ministries of Sports, Health and Education as they are significantly involved in promoting physical activity within Gulf Cooperation Council countries [22–24]. Attempts to contact the ministers directly were unsuccessful. However, we managed to reach senior staff in the ministries and in university sports federations which belong to the Ministries of Education. Additionally, we employed different strategies to engage participants from the non-governmental sector in both countries, including networking through professional contacts of the first author, utilizing online platforms such as Twitter and Facebook and forums and capitalizing on established

partnerships with both non-governmental organizations (NGOs) and governmental sectors.

Procedure

Participants were provided with information on the study, and all gave written consent to participate. Additionally, participants were informed at the beginning of the interview that they could withdraw from the study at any time if they chose not to continue participating. An interview guide, based on a review of previous literature [22, 24] and collaborative input from the authors, was developed (Appendix 2). In the interviews, we explored stakeholders' perspectives and opinions regarding existing physical activity policy documents from the Ministries of Health, Education and Sport in their country, as well as facilitators and barriers to physical activity policy development, implementation and evaluation, with field notes made during the interviews. A.A. conducted the interviews via Zoom due to the coronavirus disease 2019 (COVID-19) pandemic between December 2021 and February 2022. Interviews were conducted in Arabic, were audio-recorded with permission obtained from the participants and transcribed verbatim, and lasted between 10 min and 45 min. Repeat interviews were not carried out. The following personal information was collected from each participant: name, organization, position, age, gender and previous work experience. The participants were provided with an opportunity to review the Arabic transcripts for accuracy, and the final transcripts were translated to English. Monitoring of data saturation, an ongoing process based on the notion of informational redundancy [27], was conducted to ensure that comprehensive insights were obtained. The determination of the number of samples needed to reach data saturation was done separately in each country.

Data analysis

Authors A.A., A.B. and P.G. reviewed the transcripts to familiarize themselves with the content, after which thematic analysis was jointly undertaken by A.A., A.B. and P.G. to code each transcript. Themes were subsequently developed through a partially deductive approach: Main categories in Table 1 were derived from existing frameworks of the policy process, such as the HARDWIRED framework [28] (covering aspects such as development process, partnerships, resources, communication, evaluation and evidence-base) and CAPP criteria [29] (including sectors/institutions involved, implementation, legal status, target groups, goals and targets, timeframe, budget and evaluation/surveillance). Subsequently, subcategories were added via an inductive process conducted by A.A. during the thematic exploration stage, involving a comprehensive review of all codes within the

Table 1 Main themes and subthemes from interviews with physical activity policy-makers from Saudi Arabia and Oman

Main themes	Sub-themes Saudi Arabia	Sub-themes Oman
<p>Leadership: development of and advocacy for policies that promote PA, including assistance and resources for stakeholders to facilitate the integration of PA into daily life</p> <p>Existing policy documents: most relevant existing policy documents identified by policy-makers to be analysed in a follow-up study</p> <p>Implementation of PA policies: (A) PA programs related to policies (implementation programs) – Kinds of PA programs and strategies reported (B) Role of the private sector in PA</p> <p>Data/monitoring for PA policies: importance of data and monitoring for PA policy development, implementation and evaluation</p> <p>Challenges: potential difficulties faced in implementation of PA policies and related programs</p>	<p>Sub-themes Saudi Arabia</p> <ul style="list-style-type: none"> • Collaboration between Health and Sport Ministries for nationwide physical activity policies • Health in All Policies (HiAP) as a key objective in Vision 2030 • Intersectoral collaboration in health • Quality of life document [31] • Exploratory examination document [41] • University sports federation strategy document [33] • Healthy food/PA strategy documents [34–36] • Initiatives to boost physical activity: Walk 30 Minutes by MoH and Talented Support Program by MoS Promoting physical activity in malls and universities; Healthy Mall Campaign and Healthy Campus Project by the Ministries of Health and Education • National Strategy for Healthy Food and Physical Activity (2015–2025) initiatives • Corporate support for physical activity programs: Tatweer educational company and Red Sea company's contributions to schools and communities • Private universities' promotion of PA for staff and students • NGO and community group initiatives for walking and hiking programs • Lack of good data on PA prevalence across ministries • Inconsistent data and comparison challenges in physical activity levels across populations and regions <p>Economic challenges</p> <ul style="list-style-type: none"> • Lack of funding for research • Lack of funding for facilities <p>Political challenges</p> <ul style="list-style-type: none"> • Sustainability of physical activity programs • Lack of collaboration between the ministries • Health sector transformation as part of Vision 2030 <p>Environmental challenges</p> <ul style="list-style-type: none"> • Hot climate • Negative attitudes in the community towards physical activity 	<p>Sub-themes Oman</p> <ul style="list-style-type: none"> • Ministry of Health's role and committees for NCD prevention and control • HiAP achievements rely on individual agency initiatives • Limited inter-ministerial cooperation • Oman's Vision 2040 document • Education documents (e.g. student learning calendar, education document, education standards document and the school sports curriculum) • Omani Sports Strategy document • National Policy for Prevention and Control of NCDs document* • Omani Ministry of Education's strategies to promote physical activity in schools • Community-based physical activity initiatives during COVID-19: Active community and Healthy cities and healthy villages • Interlinked policy documents for PA: Initiatives from Ministries of Health, Sport, and Education • Ministry of Education's key role in corporate partnerships • Corporate collaboration for student physical activity; partnership with Muscat Pharmacy & Stores LLC for school sports funding • No monitoring of PA programs in the MoE • Ministry of Health's leadership in physical activity surveillance through a comprehensive monitoring system <p>Economic challenges</p> <ul style="list-style-type: none"> • Lack of funding for physical activity programs • Lack of school facilities for physical activity and physical education <p>Political challenges</p> <ul style="list-style-type: none"> • Lack of collaboration between the health, sport and education sectors • Lack of support from the government <p>Environmental challenges</p> <ul style="list-style-type: none"> • Negative attitudes in the community towards physical activity • Desert environment • Students' lack of time for engaging in physical activity

Table 1 (continued)

Main themes	Sub-themes Saudi Arabia	Sub-themes Oman
<p>Opportunities: future potential for implementation of PA policies and programs</p>	<p>Economic opportunities</p> <ul style="list-style-type: none"> • Investing in sports academies and programs for talent development and youth physical activity promotion • More government financial support for effective physical activity policies <p>Political opportunities</p> <ul style="list-style-type: none"> • Coordinating efforts and resources across sectors for efficient, effective and sustainable physical activity policies and programs <p>Environmental opportunities</p> <ul style="list-style-type: none"> • Leveraging technology for personalized and engaging physical activity interventions 	<p>Economic opportunities</p> <ul style="list-style-type: none"> • More government financial support for effective physical activity policies • Enhancing physical activity facilities and workforce development <p>Political opportunities</p> <ul style="list-style-type: none"> • Governmental commitment to prioritizing physical activity in national plans • Coordinating efforts and resources across sectors for efficient, effective, and sustainable physical activity policies and programs <p>Environmental opportunities</p> <ul style="list-style-type: none"> • Promoting community participation in physical activity through local residents, schools, businesses and civil society organization

MoE Ministry of Education, MoH Ministry of Health, MoS Ministry of Sport, PA physical activity, HiAP Health in All Policies

* Information about the policy documents listed in this table is provided in the Results section

combined dataset encompassing both Saudi Arabia and Oman. A.A., A.B. and P.G. discussed the coding and the preliminary interpretations to cross-validate the findings. These themes were informed by a comprehensive analysis of the extant literature and relevant findings from previous studies [22, 24]. As a medical doctor at King Faisal Medical City in the southern region of Saudi Arabia, the lead author's professional background informed his approach to data analysis in this qualitative study.

Ethical approval

The study was approved by the Human Research Ethics Committee of the University of Technology Sydney (UTS HREC ref. no. ETH21-6428).

Results

Interviews were conducted with 19 high-level stakeholders in physical activity policy; 12 from Saudi Arabia and 7 from Oman. A total of four of the participants (two from each country) were women. In Saudi Arabia, four participants were from the Ministry of Health (MoH, including one from an NGO that is supervised by the MoH), five were from the Ministry of Education (MoE) and three represented the Ministry of Sport (MoS). In Oman, one participant represented the Ministry of Health, three were from the Ministry of Education and three were from the Ministry of Sport.

We generated six themes regarding physical activity policies in Saudi Arabia and Oman: leadership; existing policy documents; implementation of physical activity policies; challenges; data/monitoring for physical activity policies; and future opportunities. The theme non-profit sector/community groups was generated only for Saudi Arabia. Table 1 provides an overview of the derived main themes and findings.

Leadership

Saudi Arabia

Participants from the Saudi MoH and MoS stated that the leadership in the legislation, regulation, and evaluation of physical activity policies is divided between the two ministries. They also collaborate with other government agencies, including the MoE and the Ministry of Municipal and Rural Affairs, to increase physical activity opportunities in schools, workplaces and communities. Two participants from the MoE mentioned that the University Affairs Council and the Supreme Economic Council also work in the promotion of physical activity by regulating the implementation of programs in their sectors according to policy documents from the MoH and MoE.

According to the participant from the NGO supervised by the MoH, the non-profit sector is instrumental

in promoting physical activity through walking groups. These have been established throughout the country to provide opportunities for people to engage in physical activity and to socialize, and which are co-organized by various stakeholders, including local businesses, schools, healthcare providers and government agencies: "I firmly believe that the non-profit sector plays a pivotal role in advocating for physical activity in Saudi Arabia" (NGO participant).

Participants from the Saudi MoH underlined that Health in All Policies is one of the main objectives in the new health care transformation in the kingdom. Most participants from the three ministries identified a certain level of cooperation between different stakeholders, particularly between the Ministries of Health, Sport and Education.

Oman

The Omani MoH leads the policies and programs to promote physical activity. Participant 1 from the MoH said that their non-communicable disease (NCD) and Health Committees are crucial for leading policy-making and promoting physical activity related to the National Policy for Prevention and Control of NCDs document [30].

Regarding Health in All Policies, all participants from Oman stated that there is cooperation between the different ministries, but that it is limited and based on individual agencies' own initiatives rather than combined efforts or a policy imprimatur: "Partnerships exist, but they are limited and based on individual initiatives" (participant 2 from the MoS).

Relevant existing policies

Saudi Arabia

Most of the participants from all three ministries in Saudi Arabia referred to the Quality of Life document [31], an economic and social reform blueprint that is part of the government's overarching Saudi Vision 2030 development program [32]. The Quality of Life document includes the most important physical activity policies implemented by the three ministries: "There is no doubt that the 2030 Vision is our basic guidance" (participant 3 from the MoH). "Before 2017 there were no clear policies. Everyone works on vision files, and everyone has to achieve the [Vision 2030] target to increase the quality of life of the Saudi community" (participant 2 from the MoE). The Quality of Life document emphasizes the need to enhance public health and healthcare services, promote healthy behaviours, and provide opportunities for physical activity and sports participation.

Interviewees from the MoE highlighted that the University Sports Federation strategy promotes physical activity and sport in tertiary education [33]. Some

important miscellaneous policy documents were identified by staff of the three ministries, such as the National Strategy for Healthy Food and Physical Activity 2015–2025 [34], the Physical Activity Guidelines for Health Practitioners [35], the 24-Hour Movement Guidelines [36] (all by the MoH) and the annual report of the Sport for All Federation by the MoS [37].

Oman

Almost all participants across all three ministries stated that the government of Oman's overarching Vision 2040 [38] is currently the most important policy document. Participants from the MoE reported that the Vision 2040 guides the promotion of student physical activity, with support from related documents such as the student learning calendar, education document, standards document and the school sports curriculum. These policy documents aim to promote physical activity among students by better integrating physical education (PE) classes into the overall curriculum to encourage regular physical activity and healthy habits. According to participant 1 from the MoH, the Education Document is a comprehensive strategy, including PE and promotion of physical activity in schools and universities. The document outlines various initiatives, policies and guidelines to ensure that education includes a focus on physical health and fitness [39]. Three participants from the three different Omani ministries referred to the National Policy for Prevention and Control of NCDs [30], published by the MoH, as the central policy document for physical activity promotion in Oman. Three study participants from the MoS suggested that the Omani Sports Strategy [40] is important for guiding the promotion of physical activity for different segments of society.

Implementation of physical activity policies

(A) Physical activity programs

Saudi Arabia The MoH and MoE collaborate on a range of health-related issues (obesity, diabetes, mental health and visual acuity) to improve the overall health of school students and to detect problems at an early stage [41]. This led to the development of the Rashaka initiative, a large-scale multi-component school-based obesity prevention program, which started in 2016 and involved nearly 1000 schools across the country. In 2020, Rashaka was replaced by an annual program composed of screening of students for early signs of chronic diseases and lectures highlighting the significance of physical activity and a healthy diet.

Participants 3 and 4 of the Saudi MoH mentioned the Walk 30 Minutes initiative, which was implemented in 2021 and intends to increase physical activity through mass media and social media, and forms part of the National Strategy for Healthy Food and Physical Activity

2015–2025 of the MoH. An initiative by the University Sports Federation [33] (related to policies from the MoS), aiming to support sports facilities and clubs for girls and women, was mentioned by three participants from the MoS, and one participant highlighted the MoS's Talent Support Program to identify and develop talented athletes in different sports.

Participant 3 of the Saudi MoH and participant 5 of the MoE mentioned the Healthy Mall Campaign and the Healthy Campus Project to promote physical activity in air-conditioned malls and universities. These initiatives are related to policies of the National Strategy for Healthy Food and Physical Activity (MoH and MoE). Despite challenges, the study participants considered the Saudi physical activity programs to be effective.

Oman Participants 1 and 2 of the MoE identified programs related to PE policies from the Education Document, which include increasing the number of PE classes per week and organizing tournaments in different sports. According to participants from the three different ministries, a range of physical activity programs took place during the COVID-19 pandemic, including campaigns calling for physical activity at home using apps with exercise videos. These initiatives, as reported by the participants, align with and are supported by the physical activity policy documents from the Ministries of Health, Sport and Education, that is, the National Policy for Prevention and Control of NCDs [30] and the Oman Sport Strategy [40].

According to multiple participants, several community-based initiatives were underway in Oman, such as Active Community, Healthy Cities and Healthy Villages and The Green Playgrounds Project. These initiatives had been set up in all Omani cities to make the built environment more activity friendly, for example, by improving neighbourhood walkability, which is also based on the National Policy for Prevention and Control of NCDs [30].

(B) Private sector

Saudi Arabia According to most of the participants, the private sector makes important contributions to physical activity promotion in Saudi Arabia by being directly involved in the policy development process. The Tatweer Educational Company, a private holding dedicated to implementing the government's education reform initiative, has developed programs to promote physical activity in schools, aligning with its commitment to a holistic education system. In line with the conceptualization of active travel as physical activity, the Red Sea Company drives the development of Saudi Arabia's west coast and aims to improve neighbourhood walkability. Participants from the MoE were unanimous in the view that private universities make significant contributions to the promotion of

physical activity among staff and students on the basis of financial support from their funders. International and local investors in the education sector are urging private universities to promote physical activity to enhance the universities' reputation and to be more attractive for prospective students.

According to participant 1 from the Ministry of Health, walking and hiking groups supported by the Health Promotion Center [42] (a non-profit charitable organization under the umbrella of the Saudi Ministry of Labor and Social Affairs) play an important role in promoting physical activity in Saudi Arabia. This is despite a lack of governmental support, with influencers and celebrities utilizing social media platforms for the promotion of physical activity. This organization has internal policies for the promotion of physical activity through different programs: "The fact is that community groups working to spread this culture of walking have no ceilings, no limits, and no bureaucracy" (participant 1 from the MoH).

Oman In contrast to Saudi Arabia, participants in Oman stated that more support from the private sector is needed to promote physical activity in the country. However, participant 3 from the MoE mentioned an agreement between the MoE and Muscat Pharmacy & Stores limited liability company (LLC) to hold a football tournament for elementary school students. Nevertheless, it is important to highlight that there is a prevailing perception that physical activity cannot be easily monetized. This contributes to the private sector's limited interest in supporting such initiatives in the Gulf countries, as it is not perceived to yield immediate profits. Overall, the participants from both Saudi Arabia and Oman stated that, unlike in government-supported programs, in the private sector there are no performance indicators to track the progress of physical activity programs.

Data/monitoring

Saudi Arabia

Two participants from the Saudi MoH and MoE mentioned challenges in relation to physical activity monitoring, as each of the three involved ministries independently conducts surveys on physical activity with different methodologies and tools, which may yield conflicting results in monitoring the effects or end-product of physical activity policies. Furthermore, participants from all three ministries confirmed the existence of national surveys for physical activity and emphasized their importance in assessing activity levels. They also shared insights about how they monitor the implementation of physical activity policies and evaluate the effectiveness of various initiatives in their respective sectors: "We follow and evaluate health through periodic national

surveys, but each ministry has its own survey with different results. It is not clear how widely these data are utilized in different sectors, such as education, and sports, to inform policies and interventions" (participant 2 from the MoH).

Oman

Participants from the MoH and MoS stated that participation rates, policy compliance, budget allocation and health outcomes are being tracked to assess the effectiveness and progress of physical activity policies, with a specific focus on regular reports and data analysis. Furthermore, one participant from the MoE said that there is no monitoring happening for their education-specific policies.

Challenges

Saudi Arabia

Participant 4 from the MoH suggested that limited policy implementation is likely until the health transformation process is completed by 2030. The health transformation in Saudi Arabia is a recent, prominent project that aims to restructure the health sector to make it more comprehensive, effective and integrated. The transformation is mainly focussed on the prevention of chronic diseases and the promotion of a healthy lifestyle through physical activity and a nutritious diet. On the ground, this transformation entails significant changes in healthcare infrastructure, delivery and accessibility, as well as increased awareness campaigns and the implementation of various programs aimed at improving public health and wellbeing [43]. To expedite the health transformation in Saudi Arabia, the respondent considered it essential to implement the policies from the Quality of Life document, which is part of the Kingdom's Vision 2030. This particularly involves promoting physical activity and healthy lifestyles. By fostering these habits, the country could achieve significant improvements in public health and wellbeing. Participant 3 suggested that bureaucracy is a limitation, as new policies and regulations take a long time to implement under different administrations. Moreover, participants from the MoH and MoE declared that a lack of sustainability of physical activity programs and funding were major limitations due to changes in administrations over short periods. Most participants representing the three Saudi ministries stated that a lack of collaboration and cooperation between government departments was a major challenge. For instance, some policies from the MoH need to be implemented by the MoE, such as the screening program of school students [41]. The hot climate and the desert environment in the Gulf region also present challenges when it comes to implementing physical activity policies.

According to most participants, a lack of funding for the promotion of physical activity was a common challenge in Saudi Arabia because health budgets are mostly allocated to hospitals and curative services rather than to NCD prevention, including physical activity promotion. A lack of facilities (e.g. sports fields, recreation centres, indoor and outdoor courts and multi-use sporting hubs) is a further challenge according to most Saudi respondents. Moreover, negative societal attitudes towards physical activity were highlighted by one participant, citing challenges such as the prevalence of social norms that prioritize sedentary pastimes and leisure activities, thereby reinforcing a culture that tends to discourage physical activity [44].

Oman

According to most participants, insufficient collaboration between different stakeholders, as well as a lack of government funding and support from the private sector, were the most important barriers to physical activity promotion. Like in Saudi Arabia, participants from Oman said that the hot climate and desert environment in the Gulf region, a lack of facilities and/or a lack of access to them and negative attitudes in the population towards physical activity (social norms that prioritize sedentary pastimes and leisure activities) all pose obstacles to physical activity. Some participants from the MoE stated that a lack of support for PE facilities in schools has been a major obstacle to increasing students' physical activity. Like in Saudi Arabia, respondents from Oman felt that the country should rapidly implement the provisions of the Vision 2040, specifically those related to the prevention of chronic diseases through the promotion of a healthy lifestyle and physical activity. Furthermore, an increase in government funding dedicated to promoting physical activity would be desirable.

Future opportunities

Saudi Arabia

Participant 3 from the Saudi MoH stated that future policies might include investment in technology, such as developing smartphone apps for the promotion of physical activity during pandemics, and these could contribute to future physical activity programs. However, this requires direct support from the government, both financially and technically, by providing technical expertise, developing and implementing technology-based solutions and ensuring privacy and security. Furthermore, participant 1 from the MoS and participant 3 of the MoE claimed that programs, such as out-of-school academies for talented young athletes, could further encourage physical activity and foster athletic talent. Three participants from the MoE pointed out that unifying efforts

between different stakeholders would be important. Moreover, more support in terms of funding, infrastructure, a skilled workforce, and research are considered promising opportunities by most participants from the three ministries.

Oman

Participants from the three ministries stated that community participation, such as activating schools as centres for physical activity promotion in the community, would be a great opportunity in the future if cooperation between different ministries is enhanced. Three participants from the Omani MoS and MoE said that improvements to facilities and the skills of the workforce (e.g. PE teachers, coaches, gym instructors, etc.) are required to increase activity levels. Despite the existence of the national plan for physical activity promotion in Oman [45], all participants emphasized that the lack of partnerships between the government and other relevant parties, such as schools, sports clubs and community organizations, is a common and significant obstacle. Furthermore, participant 1 from the MoS and participant 3 from the MoE said that more support for out-of-school sport academies, including improved collaboration between governmental agencies and the private sector, and supporting physical education as a part of the Omani education strategy, would be great opportunities.

Participants from the Ministries of Education of Saudi Arabia and Oman highlighted that physical education is crucial for the future in both countries, fostering healthy habits essential for a productive workforce. Integrating physical education into the curriculum promotes wellness and prevents lifestyle-related diseases, contributing to various sectors [39]. As both nations progress, emphasizing physical education will enhance individual health and serve as a strategic investment in a robust, dynamic workforce.

Discussion

This study examined cross-sectoral barriers and facilitators for physical activity policy development, implementation and evaluation in Saudi Arabia and Oman by interviewing high-level stakeholders from their Ministries of Health, Sports and Education. Oman established a national policy framework for physical activity in 2014 [18] under the umbrella of the Oman Vision 2040 [38], 3 years before Saudi Arabia introduced its Quality of Life Program [46] under the umbrella of the Saudi Vision 2030 [31]. Many programs and initiatives to enhance physical activity in both countries were identified, particularly sports initiatives. However, it is worth noting that these efforts often lack comprehensiveness, encompassing a broad range of activities and demographics, and face

challenges in effective implementation – observations that are in line with findings from a survey on national physical activity policies by Klepac Pogrmilovic et al. [8]. The programs and initiatives are predominantly focussed on urban areas and may neglect rural communities [44, 47]. Interest in promoting gender equity in physical activity in Oman was prominent, with several programs for female participants [24]; there was less focus on gender equity in Saudi Arabia, although a positive development was the introduction of PE classes for female students in primary and secondary education in 2018. Policies for promoting physical activity should also support individuals with special needs, patients and the elderly by implementing community programs targeted at these groups, such as walking groups and fitness classes for older adults, and programs targeting people with chronic conditions. Additionally, it is important to focus on policies and programs that support gender equality in physical activity and health.

Our finding regarding insufficient backing of policy interventions to create environments supportive of physical activity in both countries aligns with a study by Allender et al., who interviewed stakeholders in local government in Victoria, Australia, to analyse physical activity policies and initiatives. Similar to our findings from Saudi Arabia and Oman, they identified a lack of relevance and competing priorities (i.e. promoting healthy eating environments was not considered a priority above food safety) as reasons for the lack of support towards creating supportive environments for physical activity and healthy eating [48].

Health in All Policies has been embraced in Saudi Arabia by integrating the promotion of physical activity into policy development across various areas such as education, sports and the private sector. However, while this integration is mentioned in the respective documents, challenges in implementation may have arisen due to limited cooperation between sectors. Many partnerships have been established with multiple parties in the Kingdom (MoH, MoS, MoE, and the Ministry of Municipal and Rural Affairs) to further develop physical activity policies in each sector and to remove obstacles to the implementation of physical activity programs. According to a WHO report from 2017, promoting Health in All Policies in Saudi Arabia has been identified as a national priority, monitored by the Ministry of Health [49]. Intersectoral collaboration in Oman is apparently less developed than in Saudi Arabia, hindering the integration of physical activity policies across sectors. Unlike Saudi Arabia's comprehensive approach of Health in All Policies, Oman relies more on individual agency initiatives. However, there is potential for improvement in Oman to strengthen intersectoral collaboration and enhance the

integration of physical activity policies by establishing a comprehensive policy framework and promoting coordinated efforts among sectors. For instance, the Omani government could create an intersectoral task force or committee dedicated to fostering collaboration.

In Saudi Arabia, the non-profit sector, represented by community groups, plays a significant role in promoting physical activity outside of the government framework, aided by the promotion of physical activity by influencers and celebrities through social media platforms [42]. By contrast, our study participants did not mention any significant involvement of the non-profit sector in physical activity promotion in Oman, either because these types of organizations do not play a role or because their role is not valued by the government stakeholders who we interviewed. The private sector contributes to promoting physical activity in both countries, with particularly strong partnerships with the governmental sector in Saudi Arabia. This may be because tax benefits exist for companies that encourage and promote physical activity in Saudi Arabia [31]. There are previous examples of these types of partnerships in Oman, such as a collaboration between the education and private sector aiming to create a healthier environment and lifestyle in schools. These partnerships have been achieved through the provision of financial support and sponsorships, specifically targeting sports equipment, facilities and physical activity programs in schools [50]. However, insufficient budget allocation in this area was considered a challenge, which is consistent with our study, with most participants from the sultanate expressing the need for greater financial support from the private sector.

Policy limitations differ between both countries, mainly due to the health transformation in Saudi Arabia, specifically with the Kingdom's Vision 2030 [51]. The slow pace of transformation in various Saudi public health, infrastructure, urban planning, sports and recreation policies may impact their likelihood of being fully implemented by 2030, potentially falling short of WHO's target for increased physical activity by that year set in their Global Action Plan on Physical Activity [52]. One of the objectives of the health sector transformation and the Quality of Life Program is to decrease the proportion of the Saudi population who are not sufficiently physically active below (67%) by 2030 [51]. The government has taken proactive measures to promote physical activity, investing in initiatives that raise awareness about its importance and the associated health benefits. This includes campaigns, public awareness programs and the establishment of recreational facilities to facilitate physical activity. In Oman, more collaboration between political parties is essential to improve the implementation of physical activity

policies. According to participant 1 from the Omani MoH, several meetings were recently held with all parties to create plans to better implement physical activity policies. These meetings have led to increased monitoring and stricter enforcement by the Omani government regarding the implementation of physical activity policies in all relevant ministries. Effective health system policies significantly depend on inter-institutional collaboration. While primary health institutions play a central role, the impact of related entities is equally crucial. Educational bodies, sports organizations and community health centres contribute significantly to decision-making processes. Their closer involvement would ensure a more comprehensive approach to promoting physical activity, enhancing wellness and preventing lifestyle-related diseases [53].

According to previous studies, insufficient funding for promoting physical activity, and more broadly for NCD prevention, is a challenge in both Saudi Arabia and Oman [23, 24]. Similarly, in a US study, state public health practitioners were interviewed about the National Physical Activity Plan, who also identified implementation costs and the complexity of physical activity policies as significant challenges [54]. Financial incentives and private sector involvement, while valuable, do not ensure adequate funding for all aspects of public health initiatives. The private sector's contribution is often focussed on areas aligned with their business interests or corporate social responsibility. Nevertheless, in Saudi Arabia, certain private sector companies run national programs, such as the Tatweer Educational Company, a private holding dedicated to implementing the government's education reform initiative [55, 56]. Enhancing funding for the implementation of physical activity policies in the Gulf region holds great promise in advancing infrastructure, cultivating a proficient workforce, and fostering research initiatives. On the basis of the Saudi Quality of Life document 2030 [46], the budget of the Ministries of Health, Sport and Education for promoting physical activity will likely increase until 2030.

The monitoring and evaluation of policy implementation across ministries in both countries is challenging due to the absence of comprehensive and precise data on physical activity prevalence in key sectors such as health, sport and education. Therefore, there is an urgent need to address data quality issues, such as inconsistent measurement methods employed across different sectors, which make it difficult to compare and consolidate data, and the lack of standardized protocols which undermines the accuracy and reliability of prevalence estimates. To efficiently monitor policy implementation, the responsibility could, for instance, be entrusted to the MoH for coordination with all pertinent sectors, while the General

Statistics Authority should be designated to collect data on physical activity.

Responsibility for ensuring data quality rests with various stakeholders involved in the data collection, including researchers, survey administrators, data analysts and policy-makers. These stakeholders must work collectively to implement robust data collection methodologies, appropriate sampling techniques, rigorous quality control measures and transparent reporting practices. Monitoring of the impact of policies on population levels of physical activity in Saudi Arabia and Oman has improved, but more work is needed, particularly in the education sector in Oman, which requires evaluation of the progress and impact of policies.

To create and implement comprehensive policies, programs and supporting environments, a variety of sectors must collaborate in both countries. This may include transport, urban planning, media, social work, religious and cultural affairs [23]. In Saudi Arabia, one of the most effective health-promoting practices is physician-recommended physical activity [57], which is recognized as one of the eight best investments for physical activity by the International Society for Physical Activity and Health [58]. Therefore, the primary healthcare system in the Gulf region has a critical role in the promotion of physical activity, and further policy development in this area would be promising [57]. In addition, physical education policies in schools play an integral part in the Gulf states [59]. Educational institutions in Saudi Arabia and Oman are crucial in promoting physical activity among various age groups. From childhood through adolescence to young adulthood, schools offer structured physical education programs, health education and gender-inclusive activities. Universities support these efforts by providing sports facilities and activities as well as by conducting research on active lifestyles. Coordinated national policies amplify the effectiveness of these initiatives [22, 39, 60]. Furthermore, active transport and urban design policies have not yet been developed sufficiently to become potential contributors to population levels of physical activity in these countries due to cultural, environmental and climatic differences [23].

Strengths and limitations

Strengths of this study include a sample of high-level stakeholders who are directly involved in the formulation of physical activity policies from three ministries in Saudi Arabia and Oman, the two largest countries in the GCC. Additionally, we recruited one prominent participant from an NGO that is supervised by the Saudi Ministry of Health. We were not able to reach participants from the non-governmental sector in Oman. The original research plan was targeted at all six member countries of the Gulf

Cooperation Council, but we were not able to recruit participants from the other GCC states due to political sensitivities surrounding the subject and a lack of responsiveness from relevant authorities. This may limit the generalizability of our findings beyond these specific contexts. However, we managed to recruit senior participants from the two largest GCC countries, which account for 70% of the GCC population. As in many countries, governmental representatives may have been constrained in what they reported in these interviews. Regarding the limitation of interview responses, some participants spoke about the existence of physical activity policies but did not want to provide further information on how they are being implemented, and this kind of information is not easy to obtain from other sources either. Thus, these gaps constitute a need for future research. To ensure research quality based on Lincoln and Guba's criteria [61], we implemented several strategies. For credibility, we used investigator triangulation (involving multiple researchers) and theoretical triangulation (utilizing multiple policy frameworks). We did not use methodological triangulation, as we only conducted interviews, nor data triangulation, relying solely on audio transcripts. To ensure dependability, we kept detailed records of data collection and assessed coding accuracy and reliability among our team. For transferability, we addressed inherent challenges by collecting data from two countries, Saudi Arabia and Oman, enhancing the applicability of our findings to similar contexts. Although achieving confirmability was challenging due to our focus on individual perceptions, we aimed for transparency and objectivity in documenting our procedures and decisions.

Conclusions

This study fills important gaps in the analysis of physical activity policies in the Gulf region. Understanding the unique challenges, barriers and successes in promoting physical activity in the GCC countries is essential for developing relevant policies and strategies in the future. Our study highlights the importance of increasing financial support, improving collaboration between governmental agencies and between them and the private sector, and consolidating efforts to back physical activity policies and dismantle cross-sectoral barriers in Saudi Arabia and Oman. Educational institutions in Saudi Arabia and Oman play a crucial role in promoting physical activity from early childhood to young adults. Schools offer structured physical education, health education and gender-inclusive activities, while universities provide sport facilities and conduct research on active lifestyles. Coordinated national policies enhance the effectiveness of these efforts.

Specifically, we recommend allocating dedicated funds, establishing a centralized task force for coordinated

policy implementation, creating incentives for private sector investment, developing a national strategy with measurable targets and conducting comprehensive policy reviews to remove bureaucratic obstacles. These steps will facilitate sustained progress and broader engagement in physical activity initiatives.

Our findings provide valuable insights and evidence for policy-makers, public health officials and other stakeholders in the region to develop targeted policies, programs and interventions that promote physical activity and prevent non-communicable diseases. The identified challenges and limitations of physical activity policies in Saudi Arabia and Oman will guide their future development.

Abbreviations

COVID-19	Coronavirus disease 2019
GCC	Gulf Cooperation Council
HiAP	Health in all policies
LLC	Limited liability company
MoE	Ministry of Education
MoH	Ministry of Health
MoS	Ministry of Sport
NCD	Non-communicable disease
NGO	Non-governmental organization
PA	Physical activity
PE	Physical education
UAE	United Arab Emirates
US	United States
WHO	World Health Organization

Supplementary Information

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Supplementary material 1.

Supplementary material 2.

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Author contributions

A.A. recruited participants and conducted interviews with policy-makers. A.A., A.B. and P.G. collectively analysed the transcripts. K.G., A.B. and P.G. made significant contributions to the thorough review and editing of the manuscript.

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Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available to maintain participants' confidentiality. However, they can be obtained from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

The study was approved by the Human Research Ethics Committee of the University of Technology Sydney (UTS HREC ref. no. ETH21-6428).

Competing interests

The authors declare that they have no competing interests.

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