

Environmental conditions of adult women's health, physical activity, and lifestyle in Amman

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Abstract:

It is evident today that the social environment determines women's health and lifestyle, which has been supported by previous researchers. Followed by the environmental model, this study analyzed the elements that might affect women's health and quality of life of Jordanian female adults. Due to the widespread inactive lifestyles and poor nutrition, a higher obesity rate was measured compared to the data in the last century. A content analysis was carried out in 2023 using several databases and publications. The sources of the dataset were taken from Jordanian and international statistical websites and World Health Organization reports. Publications were taken between the years 1991-2023 that focused on: 1) environmental influence on women's lifestyle, 2) sociodemographic barriers and facilitators to women's physical activity, and 3) the impact of culture and traditions on women's physical and recreational activities. There are disparities between male and female populations regarding the level of physical activity and obesity rates which might be influenced by traditional and cultural norms in Jordan. Also, household duties, built environment safety, social support, place aesthetics, and socio-economic status are responsible for a healthy lifestyle. More advertised and socially supported activities are needed, safer places and better access to active programs and campaigns for women. The analysis has shown that more detailed subjective research on surrounding environment to prevent further negative trends among Jordanian female population.

Keywords: Jordan, women's health, social environment, socioeconomic influence, physical activity.

In Western societies, there is a lot of prejudice regarding the possibilities of recreation activities and sports for Muslim women. This is traced back to the disadvantageous role of women in the family and the way of dressing prescribed by the Islamic religion, since they need a suitable social environment in which their ambitions for leisure time activities are not in conflict with their religious commitment to modest dress and behavior. Similarly, according to

the orthodox gender ideology, girls were told that cheering for boys in sports was more appropriate than playing sports. Women were told that the nation depended on them to focus on domestic activities and stay out of the man's world of sports (Coackly, 2015). Thus, historically several cultural behaviors have limited women's participation in some leisure activities and not only the Islamic culture. In some cultures, there are unequal opportunities between genders due to cultural norms and traditions, specifically in the eastern culture. In Jordan, more than 97,2% are Muslims. However, there are more serious restrictions that exist in other Muslim countries, such as Iran, Afghanistan, Oman, Kuwait, Pakistan, Qatar, Saudi Arabia, the United Arab Emirates, and Sudan (Coackly, 2015). The religious practices vary among segments of Jordan's population despite strong identification with and loyalty to Islam (Metz, 1989). Some Jordanians' religious traditions were defined by ideas and activities that were sometimes diametrically opposed to Islamic precepts. Authorities attributed at least some of these components to local pre-Islamic beliefs and customs. Among women, the adoption of Islamic attire did not imply a return to gender segregation or female isolation (Metz 1989). Indeed, women who chose Islamic attire were frequently working women and students who interacted with males on a daily basis.

According to Vlassoff (2007) some social environmental factors are strong determinants to women's lifestyle, health outcomes, and recreation habits that are from religious, economic, cultural, and political situations that surround them (Vlassoff, 2007). Among the influencing factors are the access to healthcare, socioeconomic status, social support network, sports facilities, sports, reproductive health, cultural beliefs and practices, workplace environment and health education and awareness (Javed et al., 2022). Aforementioned elements could be limitations or support for the quality of life, especially for females. Many of them have to face some life challenges, such as work-life balance, mental health challenges due to fast-paced urban lifestyle, safety concerns, public transportation and safety, sedentary lifestyles, fast food availability, and high stress levels which can contribute to an increased risk of obesity, diabetes, and cardiovascular diseases (A. M. Lee, Cardel & Donahoo, 2019; Department of Statistics Jordan, 2023).

In the present study social environmental factors are analyzed, which affect the Jordanian female population living in the capital city Amman, which is well known as a multicultural metropolis, with a population of 4,061,150 as of 2022, with 3143 per km² population density (Department of Statistics Jordan 2023), 47% are females. The population number was also influenced by migratory waves (mostly from Palestine, Iraq and Syria) starting in 1948 (Kadhim & Rajjal, 1988). After, many updates on the city's strategic plan to keep up

with the city's development in the following decades (Beauregard & Marpillero-Colomina, 2011). Nevertheless, Jordan is classed as a lower middle-income country by the United Nations (Alawneh et al., 2018).

Literature Review

Social environment

Today's women in particular, must perform a variety of roles, including those of caregivers, mothers, and devoted employees. Thus, health levels decline even further as role demands increase (Bell & Lee, 2005). Still, that doesn't mean that men don't play multiple roles (Peng, Ng & Ha, 2023), it also depends on how one feels about their ability to manage those roles (Barnett & Hyde, 2001). Previous studies reported that generally, fathers' identity is thought to be "naturally" suitable to be head of the family, their major responsibilities are related to characteristics such as strength and providing material necessities (e.g., food and accommodation). When these attributes are satisfied, they are "encouraged" to seek fulfillment in other areas (such as recreational activities). While mothers' identity, is considered "naturally" suitable to a domestic role, with the main duties of household labor and childcare because they are positioned as patient understanding. However, because it is difficult to determine the fulfillment of those domestic responsibilities, they are frequently unmotivated from going after other fulfillments (e.g., fitness, personal hobbies) outside of the home, believing that they are "fulfilled" by being good mothers (Petrassi, 2012). Women who have received family support from their partners/family revealed that it is crucial as a facilitator for their PA/Leisure activity engagement (Lim et al., 2019).

We also affirmed to follow "The Theory of Planned Behavior", which states that behavioral intention is the most proximal determinant of human social behavior, shaped by three core components: attitude, subjective norms, and perceived behavioral control (Ajzen, 1991). The environment significantly affects people's levels of physical activity and types of sports that people are more likely to play. Previous studies have shown that the prevalence of both occasional and regular PA participation increased with Socioeconomic Status (SES) and decreased as remoteness increased, supposedly with low SES status. However, it appears that once an initial level of PA engagement has been reached, SES and remoteness are not important factors in determining the level of engagement (Eime et al., 2015). Another study was conducted among Korean adults to demonstrate the association between physical activity and accessibility to sports facilities. The METs were calculated using IPAQ questionnaires, participants with easy access to sport facilities were 1.16 times more likely to be physically

active than those with more difficult access to sports facilities (Lee et al., 2016). Other reviews on built environment influence have demonstrated that walkability elements, the provision of quality parks and playgrounds, and the establishment or improvement of active transportation infrastructure had a positive effect on active transportation, activity levels, and visits or use of settings (Smith et al., 2017). Further, recreational activity and sports were found to have a positive relationship with climatic environmental comfort, urban infrastructure, facilities, scenery and landscape, social and cultural, safety, and security and historical texture. As a result, it can be concluded that by designing the city's layout and morphology in accordance with the design sub-criteria, it is possible to increase physical activities by up to 18%, and by increasing physical activities, it is also possible to significantly reduce the level of obesity, and the risk of developing the mentioned non-communicable diseases (Fathi et al., 2020).

Considering the target group, another study by Eime, Charity, Harvey & Payne (2015), showed that adolescent females who participate in sports club have a significantly positive relationship with neighborhood and household measures of SES, especially in metropolitan areas as opposed to regional or rural ones (Eime et al., 2015). Hence, we reviewed previous studies that revealed detailed information on the diverse facilitators and barriers influencing young adult women's PA; perceived body image, health, and beauty; support, and PA; religious identity, cultural identity and safety issues which were influenced by the social-cultural impact (Peng & Ha, 2023).

Religious environment

Traditional and cultural norms which can be influenced by religion are considered as an important environmental factor on women's Physical Activity (PA). Thus, Muslim women's PA have been an important research topic recently. First, it needs to be mentioned that Islam norms do not prohibit women or its followers from participating in any PA; there are just particular rules for dressing and segregation that might restrict Muslim women's PA more than non-religious or non-Islamic women's PA (Almaqawi, 2022). Hence, it is not that Islam doesn't support women's PA, it is about the available places for participation, facilitators for segregation and having the opportunity to freely practice any sport/PA (Yilmaz, 2000). In any Middle Eastern country, finding non-mixed indoor places for women to practice PA is easy, but we can still find higher obesity rates among women than men (Sharara et al., 2018). It may be better, therefore, to consider another aspect that may be dominant on females PA more than Islamic rules, which is social and cultural aspects of fear, risk and support. A previous British study has revealed complex relationships that women have with outdoor space, as well as how access to and patterns of exercise are influenced as a result (Kilgour & Parker, 2013). Hence,

we focus on analyzing opportunities that give the freedom for women to participate in outdoor activities safely and confidently, and not only closed indoor clubs. Other previous studies have concluded that by encouraging activities that are outdoor-based, family oriented, and community-related, obesity rates among women may be decreased (O'Brien et al., 2019). Therefore, enhancing culturally based outdoor sport communities that facilitate females' PA should be considered, which is solvable since culture norms are respected. Yet no doubt that high or low values given to PA can highly differ between cultures, which is generally of higher value in western culture (Lim et al., 2019).

Muslim women's participation in sports is progressing recently and removing barriers slowly for their practicing and participating in different sports (Khan, 2023). A study was conducted to determine the demand for Muslim female engagement in sports across Muslim women, and to investigate the lack of participation among Muslim women in sports and the challenges they face. The report revealed that 43% of the participants stated that current sports facilities are insufficient for them, while 33% had bad previous experiences in their participation in sports (Muslimah Sports Association, 2022). Nevertheless, Modern Muslim female athletes have recently achieved awards in several sports, including volleyball, tennis, association football, fencing, and basketball (Culpepper, 2016). In the 2016 Olympics, fourteen women from Muslim-majority population won medals in their participating in a wide range of sports (Harvard, 2016).

Physical active lifestyle as one of the main determinant factors on health

One of the main determinant factors of health is Physical Activity (PA), which is defined by World Health Organization (WHO) as any body movement conducted by the skeletal muscles which need energy expenditure; it includes all movements during our day (leisure activities, transportation, daily work) which can be done at any level of skill and for enjoyment by everybody (WHO, 2016). Leisure-Time Physical Activity (LTPA) encompasses all physical activity-related behavior that people engage in during their free time. In any case, sport and exercise are the fundamental areas of leisure time physical activity since they are specialized forms of leisure-time behavior that intentionally strive to improve physical fitness (Steinbach & Graf, 2008).

According to WHO, regular physical activity is proven to help prevent and manage non-communicable diseases such as heart disease, stroke, diabetes, and several cancers. It also helps prevent hypertension, maintain healthy body weight and, as a result, improve mental health, quality of life and well-being (WHO, 2016). Similarly, Leisure Time Physical Activity (which is mainly of the endurance type) is reported to be associated with lower waist circumference,

blood triglyceride levels and glucose concentrations, contributing to important health-related benefits (Wens & Hansen, 2017). Nevertheless, women were almost 8 percent less active than men and didn't meet the required recommendations for PA, and this difference has persisted over the past few decades worldwide (Guthold et al., 2018).

Objectives and methods

In this study, several theories are considered that aim to analyze and connect the social environment and the status of health such as the Social Determinant of Health (SDOH) by WHO (Figure 1), which states that the non-medical elements have notable influence on health outcomes; those are the circumstances under which people are born, grow, work, live, and age, as well as the larger collection of forces and institutions that shape the conditions of daily existence. This definition was adopted by the Central of Disease Control and Prevention that aimed to lead public health practitioners to transform and strengthen their capacity to advance health equity among societies (Hacker & Houry, 2022). The SDOH factors can be grouped into 5 domains: social and community context, neighborhood and built environment, healthcare access and quality, education and access quality, and economic stability (WHO, 2008). Hence, we analyze given city neighborhood, transportation, education and literacy, employment, physical activity opportunities, safety, and air pollution.

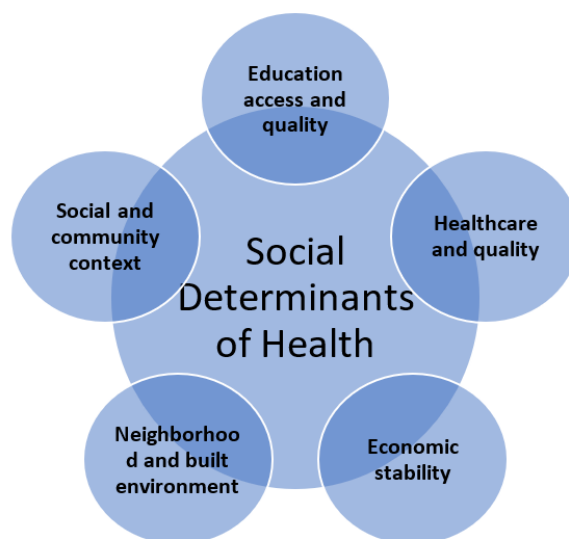


Figure 1 Social determinants of health model (WHO, 2008).

A systematic search of BioMed, Pubmed, ResearchGate, Semantic Scholar, Scopus, World Health Organization, Taylor & Francis, Jordanian Department of statistics and Jordanian Ministry of Youth and Sports between 1991 and 2023 was performed to identify studies that

analyzed environmental backgrounds. The search terms included keywords and MeSH headings using Boolean/Phrase on a combination of keywords similar to the topic specifying the urban built environment, physical activity, socioeconomic determinants, women's well-being, social habits and health literacy, Middle East, women physical activity and enabling environment.

In the analysis, the elements of the Social Determinants of Health (SDOH) and Socio-ecological Model were considered to assess the environmental conditions at the community level and public policy level that are related to health, for further understanding the dynamic interrelations among various personal and environmental factors, as well as assess the influences at the community level and public policy level that are related to physical activity (Kilanowski, 2017). Following the WHO, one of the goals of the study was to analyze whether infrastructural, physical and social environments in Jordan are the key determinants in maintaining independence and health (WHO, 2004).

Results

Social and community context

There is evidence that urban planning, architecture of healthcare facilities and policies promote healing and active lifestyle. Domestic buildings are important elements in enabling a more active and healthier lifestyle (Ulrich et al., 2010). Besides, epidemiological research has found a strong relationship between health status and community fields (Westert et al., 2005). Therefore, the healthcare system and its professionals hope to use this evidence-based knowledge to support and advocate for local policy to improve the social determinants of health, including the built environment (Marmot, 2015). Enabling environment is considered as a set of conditions and factors that facilitate the implementation of certain activities, goals, or policies, it is expected to support and promote the development and implementation of effective healthy lifestyle-related measures. According to WHO's report for Jordan PA profile 2022, there are no existing national physical activity communication campaigns that are promoting the co-benefit for physical activity (WHO, 2022).

The use of mobile wireless technologies for public health (mHealth) presence should also be considered. It has been shown to improve care quality and coverage, increase access to health information, services, and skills, and promote positive changes in health behavior to prevent the onset of acute and chronic diseases (WHO, 2018). mHealth depends on wireless devices and sensors that people wear during their daily activities; it has been reported to be

convenient and effective in changing health habits (Free et al., 2013). Previous studies showed a positive correlation between the mHealth intervention and a significant improvement in PA among workers (Jung & Cho, 2022) and among women in various areas and origins (Khader et al., 2021). Nevertheless, WHO report showed the intervention of mHealth in Jordan is still incomplete in (World Health Organization, 2022).

The above-mentioned reviews could foster analysis of the situation among Jordanian women in their urban cities regarding barriers, facilitators, family roles, norms and surrounding environment and its outcomes when we consider health, physical activity, and obesity rates. A study was conducted to determine the sociodemographic factors that limit physical activity participation; prevalence of higher physical activity was among people who are higher educated, single, people who are living in rural areas and men (Barghouti et al., 2015). The researchers revealed that mentioned results might refer to conservative traditions, cultural norms, and beliefs regarding illness and recovery that may contribute to low PA.

However, women's sports participation in Jordan is having bright achievements and challenges conquered with passion recently. Jordanian women have successfully led numerous sports delegations in international forums and have entered traditionally male-dominated fields such as training, arbitration, and administrative work in sports federations (AL-Nahda Women Network, 2021). In addition, female sports leaders have stressed the importance of having women's sports representatives present at meetings and forums that support women's participation in civic, political and sports sectors.

Her majesty queen of Jordan Rania Al-Abdullah, one of the most visible ladies worldwide, is the main idol for Jordanian women with her appearance, health care, awards, and activity among various sectors of society in Jordan and beyond, and community and youth empowerment (BBC, 2001). Her majesty established the Jordan River Federation JRF in 1995 as NGO which is dedicated to improve the livelihoods of families and communities across Jordan. The JRF works through partnerships with the private sector to provide local projects that empower women and men, developing their knowledge and skills in handicraft production, entrepreneurship and small business management (Jordan Times, 2015).

Healthcare and quality

In this study several health indicators were analyzed of Jordanian citizens such as life expectancy which has been reached in 2020 72.1 years for males and 75.1 for females. The number of hospitals is 117, and the number of physicians was 25 per 10,000 citizens (DOS, 2020). Jordanian's smoking rate in 2021 was 42% among people aged 18-69 years old (WHO, 2021). Surprisingly, it is considered as one the highest countries with smoking prevalence

worldwide (Macrotrend, 2023). Among the smokers, 17.4% are females (WHO, 2021). Waterpipe and cigarettes are highly used in Jordan (Azab et al., 2010). Among women in Arab world, Lebanon, followed by Jordan, have the highest prevalence in smoking (Abdulrahim & Jawad, 2018). Thus, the Jordanian smoking pattern demonstrates that Jordan has not yet fully achieved the socioeconomic tobacco prevalence crossover that is typical of high-income nations (Jawad, Abdulrahim & Daouk, 2016).

Neighborhood and the built environment

Jordanians live in cities with spaces lacking green areas, which contributes to a number of environmental issues that lower the quality of life in urban areas. Urban green infrastructure (open spaces, parks, natural areas, green buffers, green belts, wildlife habitats, wetlands, forest pre-serves, farmlands, and golf courses) is not well developed in Arab countries including Jordan .The development of urban green infrastructure in Jordan didn't meet the citizens' expectations yet, because for 4 million people the 8.692 km² green space isn't big enough (Al-Bilbisi, 2019) (table 1). It means only 2.5% of the total land of the city (Al-Zu bi & Mansour, 2017). In 2022, the city's development and planning law included seven land use categories: residential, car parks, commercial, industrial, office, and mixed-use zones. The three most prevalent land use zones are residential, roads, and commercial, while the lowest prevalence of land use is parks (Zeadat, 2022).

Table 1 Land use/cover change in Amman (1987-2017) (Zeadat, 2022)

Class Name	1987 Area (km ²)/ (%)		1997 Area (km ²)/ (%)		2007 Area (km ²)/ (%)		2017 Area (km ²)/ (%)		Change % since 1987
Urban Areas	147.08	19.39	195.98	25.84	214.94	28.34	237.86	31.36	+61.73%
Vegetation	35.22	4.64	28.25	3.72	23.71	3.13	16.40	2.16	-53.54%
Exposed	54.32	7.16	45.85		37.41		30.34		-44.13%
Rocks			6.04		4.93		4.00		
Exposed Soils	521.94	68.81	488.48	64.40	482.50	63.60	473.96	62.48	-9.23%

Green infrastructure provides a diverse range of environmental, social, recreational, psychological, public health, and economic benefits (Le Brasseur, 2009). It became evident that green open space is an essential resource for inhabitants' physical activity and is supposed to lower chronic illness rates and improve public health (Liu et al., 2017). The amount of total

physical activity is significantly correlated with the presence of a park within 500 meters away from home and park use. Residents' moods and energy levels were significantly improved by physical activity in parks and contact with nature improved their mental health in terms of relaxation and perceived confidence (Liu et al., 2017). Specifically, previous studies showed that women in urban cities can benefit greatly from various types of green and blue space in terms of their health and wellbeing, as well as facilitating physical exercise. Such aesthetics were discovered to enable a variety of more hidden advantages that assisted in restoring mental wellbeing through the reduction of stress and anxiety, the promotion of emotional perspective, clarity, and reassurance, as well as maintaining of positive family relationships (Thomas, 2015). Further findings revealed that women who lived close to green surfaces/areas had lower rates of visceral fat mass and obesity (Teixeira et al., 2023).

According to Zeadat (2022), urban cities in Jordan are still lacking green areas and insufficient recreational parks (table 1.). The top two obstacles to enhance green spaces in Jordan are a lack of incentive programs from local authorities and a lack of water irrigation (Zeadat, 2022). Also access to leisure areas and institutions is poor, especially for women because of the underdeveloped areas and the unsafe public transportation. Previous studies revealed that communities with mixed-use neighborhood and well-conditioned streets with safety standards showed higher levels of physical activity (Zhang & Warner, 2023).

A Canadian study among adults with mean age 41 years showed difference according to age and sex in perceived safety concerns; women were more likely than men to feel unsafe, limit their walking and perceive less neighborhood walkability (Bengoechea, Spence, & McGannon, 2005). Despite aforementioned, if we research street safety for physical activity in Jordan, there are only a few separated walking and cycling trails and no safe pedestrian and cycling crossings, while there are legislations on speed limits, management of speeds, driving, restrictions considering on using alcohol, drugs, and mobile phones (WHO, 2022).

In addition, public transportation is not practical for females since bus usage is not common for them and there are no metro/tram lines, hence many females tend to use cars or taxis. Despite that fact that active transportation and public transport is significantly associated with meeting the Moderate-Vigorous Physical Activity MVPA and daily steps recommendations (Herrerros-Irarrázabal et al., 2021), By 2020, Road Accidents Rate (Per 1000 population) reached 0.8, counting only the accidents that resulted in human injuries (DOS, 2020). Also, considering domestic and regional safety, Jordan has been wedged between regional threats, domestic socioeconomic pressures and international conflicts in Syria, Iraq

and Palestine-Israel conflict. However, it is considered one of the most stable Arab countries in the Middle East regarding safety (Shehab Al-Makahleh, 2018).

Previous studies concluded that gender may modify the associations of officially recorded crime rates with physical health; perceived neighborhood safety was independently associated with physical health among women (Garcia Bengoechea, Spence & McGannon, 2005; Roman & Chalfin, 2008; Malambo et al., 2018). According to Jordan Department of Statistics, the Crime Rate reached 4.0 (per 1000 people) in Amman by the year 2020 (DOS, 2020).

Economic Stability

Income, wealth, work position, and occupational category are major predictors of access to care, safe housing, and a variety of other factors that directly or indirectly affect health status (Javed et al., 2022). Accordingly, there is data from a recent study that found a link between higher wealth mobility and a lower risk of cardiovascular disease events and death (Machado, Sumarsono & Vaduganathan, 2021). Also, researchers revealed that differences in income, wealth, and other socioeconomic determinants are directly linked to poor Cardiovascular health and quality of life and are major drivers of disparities in CVD (Schultz et al., 2018). Besides, employment status and occupational category are important predictors of physical and mental wellbeing, including depression, hypertension, and diabetes (Madsen et al., 2017).

In Jordan, the substantial increase of the population, coupled with slowed economic growth and rising public debt, led to a worsening of poverty and unemployment in the country, hence low economic growth. As of 2019, Jordan has a GDP of US\$44.4 billion, ranking it 89th worldwide (Worldometer, 2023). Jordan has high unemployment rates; unemployment is a major issue, particularly for young people, women, and those with a university degree, with rates of unemployment exceeding 45%, 30%, and 30%, respectively (Alkhatib, 2020). The unemployment rate was higher among females over 15 years old with 30.7% compared to 21.2% of unemployed males (DOS, 2020) (Table 2).

Table 2 Unemployment rate among Jordanian above 15 years old and comparison with other nations (UAE, Egypt, Europe, USA)

	Jordan (DOS, 2020)	UAE (World Bank, 2022)	Egypt (The Global Economy, 2022)	Europe (Eurostat 2023)	USA (U.S Department of statistics 2023)
Average	23.2%	2.75%	15.9%	5.9%	3.8%
Males	21.2%	1.93%	4.99%	6.1%	4%
Females	30.7%	6.41%	17.5%	6.7%	3.5%

Accordingly, in the 2010 Gallup Global Wellbeing Survey, 30% of Jordanians described their financial situation as "thriving" (Sowell, 2016). The situation is much worse than in some other Arab countries (United Arab Emirates, Egypt), in Europe or in the USA. The low level of income for unemployed women could indicate a shortage of financial ability to have access to paid leisure, sport, and health services. Certainly, previous studies found a positive interaction between employment status and social class. Paid employment, particularly full-time work, is associated with good physical health (Elliott & Huppert, 1991). Mentioned facts can predict certain negative health outcomes due to increased unemployment rate among Jordanian females.

Education, access, and quality

The educational system in Jordan is based on governmental and private sources. There are 4001 functioning public schools, 3967 private schools, 48 community colleges, and 19 universities (Amman News, 2023). In both systems, boys and girls have equal access to school although the private ones are more expensive. In most private and public schools, the first 5 grades are mixed gender classes. From 6th grade, most schools (public and religious) separate genders in all classes. Due to separation, it can be observed that girls have a better learning atmosphere in the classes because of their enhanced behavior when compared to boys in public schools. However, some private and Christian schools have mixed gender classes until the secondary level. At university level, most of the lectures are mixed.

Literacy in Jordan is 98%. It has increased from 94% in 2010 to around 98.0% in 2016 representing one of the highest literacy rates in the world. Among Jordanian females (15 years old and above) it reached 97.83% (UNESCO, 2017). In addition, women comprise a large percentage of Jordan's higher education attendees. Female/Male student ratio (Bachelor) stage was 125%, which reflects increased literacy among females in higher education. However, the percentage of employed women of total employee number is only 18.9% (DOS, 2022)

The Jordanian Ministry of Education prioritized improving children's health in schools and strengthening the role of physical education. It aimed to promote more fitness, physical activity, and overall healthy lifestyle among students (Al-Momani, Khasawnih, 2007). Also in the higher education system highly, ranked universities provide health and sports science programs to support highly qualified professionals (EduRank, 2023). Universities and academic institutions are key locations for cost-effective and ideal health education on non-communicable diseases in order to improve young adults' behaviors, such as exercise and a healthy diet (Abdo, Mortada, & Seifi, 2019; Joh et al., 2017).

On the other side in the school practice some teachers reported that there is a lack of good developed facilities and instruments for health and physical education and the physical education is still not well respected by the school management (Abu & Kanan, 2005; Oudat, 2016).

Another influencing factor for health education is health literacy (HL), which is the ability of a person to access, read, process, and comprehend the fundamental health information and services required to make wise health decisions. It was found to be inadequate among Jordanians in 2020. Socio-demographic factors, older age, living in rural areas and sedentary lifestyle were strongly associated with lower HL, while people with employments who have better functional and communicative skills showed higher HL (Karasneh et al., 2020). Health literacy is a developing concept and should be evaluated and improved since it can increase awareness of disease and its treatment, reduce medication errors, and cut costs associated with providing healthcare (L, AM, & DA, 2004).

Conditions for sports and physical activity

Jordan is one of the Arab countries in Asia that is most passionate about young people and sports, in general, as evidenced by the number of youth-focused sports facilities and cities. This has had a positive impact on Jordan's participation in numerous Arab, local, and worldwide championships, particularly at the level of basketball and football, which are highly popular among Jordanian youth. Young people in this country eagerly accept sports like self-defense (martial arts), swimming, tennis, handball, and equestrian sports (Wayback Machine, 2022).

In 2023, fitness, social and cultural clubs reached a total of 281 according to Jordanian Ministry of Youth (Ministry of Youth, 2023). However, female outdoor activities such as outdoor running, walking and aerobics are still widely uncommon. Despite that fact that walking and outdoor sports communities/groups tend to attract more women than men as they feel safer (Morris, Guell & Pollard, 2019). Apart from sports group or community, women in Jordan still feel uncomfortable participating in outdoor activities such as running/walking alone. Besides, there are no separate walking and cycling infrastructure nor safe pedestrian and cycling crossing (WHO, 2022).

Eating and physical activity habits of women

It is essential to analyze food consumption and dietary habits among the population to better understand and correlate it with public health issues such as obesity, which is a major risk factor for several non-communicable diseases (NCDs) (WHO, 2023). Over the past few decades, the eating habits of the countries in the Middle East region, including Jordan, have undergone significant changes due to variations in the life pattern and socioeconomic situation

which caused food transition (Musaiger, 2011b; Al-Awwad et al., 2021). There was a rise in consumption of fast foods, diets of high-energy and poor nutrients, number of meals eaten in restaurants and the cost of some important food such as meat (Bielecka, 2006; Musaiger, 2011a).

According to Jordan Household Expenditure and Income Survey (JHEIS), it was found that energy intake of Jordanians has increased in 2010 in comparison with average energy intakes obtained in previous JHEIS surveys since 1992 (Takruri, Alkurd & Faris, 2011). Besides, the consumption rates of the food groups of oils and fats, fish, beverages, and other foods were significantly higher in urban (including Amman) areas than the rural ones (Takruri, Alkurd & Faris, 2011). In addition, Al Hourani et al. (2023) showed a noticeable increase in caloric intake among children and adults (Table 3), high fat intake and less fibers intake, and that the energy intake is significantly higher in average for both sexes than Energy Expenditure (2757.7 kcal vs. 2614.5 kcal for men and 2161.7 vs. 2096.6 kcal for women). To conclude, there are some nutrient deficiencies and extra caloric intake among Jordanian population.

Table 3 Total energy and macronutrients intake and their percentage of energy contribution for the whole country, rural, and urban populations in Jordan (DOS, 2012)

Governorate	Energy Intake (Kcal)	Carbohydrate		Protein		Fat	
		(g)	% of total energy	(g)	% of total energy	(g)	% of total energy
The whole country	3325	501	60.27	110	13.22	100	27.07
Urban	3204	473	59.04	107	13.31	101	28.22
Rural	3587	584	65.07	116	12.91	90	22.57

Energy Intake EI is one of two factors that make up energy balance (Table 4); when EI rises above Energy Expenditure EE, positive energy balance occurs, which typically leads to weight gain, or being overweight or obese (Al Hourani et al., 2023). Total Daily EE which is the sum of basal metabolic rate counting for 60-70% (Pethusamy, Gupta & Yadav, 2019). Thermic Effect of Food contributing 10-15% (Calcagno et al. 2019), and PA which makes up for 10-20% (Bosy-Westphal, Hägele & Müller, 2021).

Among Jordan's population, insufficient physical inactivity (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent) reached 24.5% among females and 26.8% among males, and that the percentage of females and males who are not engaging in vigorous activity was 89% and 63.8% respectively (Ministry of Health, 2019). As a result of improper eating habits and inactive lifestyle, overweight and obesity are becoming a crucial health problem among both genders (Hamaideh, Al-Khateeb & Al-Rawashdeh, 2010). Also, Al

Hourani et al., (2023) revealed that elderly women had the highest rates of obesity (29.6%), while adults and older adult men had higher rates of overweight (41.4%).

Table 4 Mean daily intakes of energy (kilocalories) and macronutrients (grams and percentage contribution to total energy intake) of participants according to age group (Al Hourani et al., 2023).

Energy and macronutrients	Adolescents		Adults		Older adults	
	Boys	Girls	Males	Females	Males	Females
Total energy, (kcal)	2758.6 ± 817.3	2220.9 ± 716.5***	2907.5 ± 767.2	2209.3 ± 607.0***	2513.5 ± 609.9	2039.1 ± 357.4*
Total carbohydrates (g)	332.4 ± 107.4	282.9 ± 112.0*	345.9 ± 112.1	256.9 ± 72.2***	280.6 ± 112.8	229.4 ± 52.5
% of total energy intake	48.3 ± 6.6	50.7 ± 6.7	47.7 ± 7.6	46.8 ± 7.2*	44.5 ± 12.6	44.9 ± 5.6
Dietary fiber, g	18.8 ± 10.2	15.9 ± 7.2*	20.7 ± 8.7	17.8 ± 8.3***	21.9 ± 8.5	18.1 ± 5.6
Dietary fiber, (g/1000 kcal)	6.7 ± 2.5	7.1 ± 2.4	7.1 ± 2.4	8.0 ± 2.7***	8.9 ± 2.9	8.8 ± 2.3
Total protein (g)	100.4 ± 35.6	74.7 ± 25.6***	114.6 ± 37.4	81.8 ± 28.4***	93.8 ± 33.9	82.2 ± 21.9
% of total energy intake	14.7 ± 3.7	13.6 ± 2.8*	15.8 ± 3.6	14.9 ± 3.4***	15.0 ± 4.0	15.9 ± 2.7
Total fat (g)	116.9 ± 41.1	90.5 ± 29.5***	120.9 ± 42.9	97.7 ± 36.5***	117.6 ± 51.8	90.5 ± 19.8
% of total energy intake	37.9 ± 5.9	36.9 ± 6.2	37.2 ± 7.2	39.4 ± 6.7***	42.1 ± 11.1	40.1 ± 6.1
Water, ml	2152.4 ± 947.5	1997.5 ± 831.3	2844.4 ± 913.1	2602.5 ± 4254.4	3080.2 ± 20.8	2456.0 ± 518.5

This is consistent with other findings indicating that generally women always had a considerably higher prevalence of obesity than men. Also, it is found that the main associated factors with increased odds of BMI-defined obesity and a high waist circumference are: female gender, increasing age, married status, being a former smoker or nonsmoker, and having less than 12 years of education (Khader et al., 2008). Another study by Ajlouni et al. (2020) found that the prevalence of obesity was 60.4% for men and 75.6% for women, meaning that roughly 75% of both sexes were either overweight or obese as determined by BMI (Ajlouni et al., 2020). Correspondingly, Jordanian Ministry of Health has reported obesity and overweight among Jordanian population to be 40.4% and 28.2% respectively for females, while it is 24.2% and 28.9% respectively for males (Ministry of Health, 2019).

Conclusion

The study aimed to collect objective data to synthesize facilitators and environmental factors to Jordanian women physical activity, proper healthy lifestyle and life satisfaction specifically in their capital city Amman. However, further subjective analysis should be conducted to make sure of congruence since some variations exist.

Generally, Jordan is a culturally rich country in the middle east region and considered domestically and regionally safe, environmental barriers that are influenced by traditions and culture are universal, however it might be more notable in the Middle East countries including Jordan, with results that limit women's participation in recreational and PA. Nevertheless, Muslim women participation in sports is currently rising, which gives positive signs to influence women's physical activity support within society. Therefore, we reveal that cultural norms, social support and developing education systems are having more dominant influence on women's active lifestyle and participating in sports than religion and religious beliefs.

Geographically, Amman does not go through any extreme weather/climate that limit outdoor physical activity if we compare it to other gulf Middle East countries (Doomi, Aldayaflah & Hazaymeh, 2016). However, Amman lacks green spaces, water bodies/surfaces, recreational parks and outdoor facilities that influence women's physical activity and life satisfaction. Low walkability prevalence in Amman neighborhoods (streets lack walking and cycling infrastructure and safe pedestrian and cycling crossings) which makes it hard to feel safe for practicing outdoor activity specifically for women.

Existing policies, interventions and campaigns that enhance physical activity by city planners are missing in several places. Also, technology interventions and mobile applications such as mHealth that control health check-up and encourage PA are still incomplete in Jordan. Moreover, eating habits and physical activity are strongly associated with culture and society. We analyzed (women level of education, employment status, marital status) influence on their daily habits such as smoking, practicing sports and eating habits.

Moreover, prevalence of LTPA among Jordanians is low, although more than fifty percent of them know about the health consequences. Despite that literacy and education levels are higher among women than men in Jordan, prevalence of physical inactivity, obesity rates, extra caloric intake and smoking rates are high among Jordanian women, which also could reveal disparities in physical activities between two genders in the same population and points toward inappropriate social support by policy makers, family members and lack of general programs and campaigns by public health practitioners. Besides, we also agree that sport

facilities in Jordan are rising recently but still there is a need to improve outdoor physical activity communities and campaigns that are specialized for women.

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Abstrakt

Environmentálne podmienky zdravia, pohybovej aktivity a životného štýlu dospelých žien v Ammáne

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V súčasnosti je už zrejmé, že sociálne prostredie určuje zdravie a životný štýl žien, čo potvrdili aj predchádzajúci výskumníci. V nadväznosti na model prostredia sa v tejto štúdií analyzovali prvky, ktoré by mohli ovplyvniť zdravie žien a kvalitu života dospelých žien z Jordánska. V dôsledku rozšíreného pasívneho životného štýlu a zlej výživy bola nameraná vyššia miera obezity v porovnaní s údajmi z minulého storočia. Obsahová analýza bola vykonaná v roku 2023 s použitím niekoľkých databáz a publikácií. Zdroje súboru údajov boli prevzaté z jordánskych a medzinárodných štatistických webových stránok a správ Svetovej zdravotníckej organizácie. Boli prevzaté

publikácie z obdobia rokov 1991 - 2023, ktoré boli zamerané na: 1) vplyv prostredia na životný štýl žien, 2) sociodemografické prekážky a faktory uľahčujúce pohybovú aktivitu žien a 3) vplyv kultúry a tradícií na pohybové a rekreačné aktivity žien. Medzi mužskou a ženskou populáciou existujú rozdiely, pokiaľ ide o úroveň fyzickej aktivity a mieru obezity, ktoré môžu byť ovplyvnené tradičnými a kultúrnymi normami v Jordánsku. Za zdravý životný štýl sú zodpovedné aj domáce povinnosti, bezpečnosť vybudovaného prostredia, sociálna podpora, estetika miesta a sociálno-ekonomický status. Je potrebné viac propagovaných a sociálne podporovaných aktivít, bezpečnejšie miesta a lepší prístup k aktívnym programom a kampaniam pre ženy. Analýza ukázala, že na zabránenie ďalším negatívnym trendom medzi jordánskou ženskou populáciou je potrebný podrobnejší subjektívny výskum okolitého prostredia.

Kľúčové slová: Jordánsko, zdravie žien, sociálne prostredie, socioekonomický vplyv, pohybová aktivita.

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