

Assessing the Transformation of the Social Role of Public Parks During the COVID-19 Pandemic (The Case Study of King Husain Park in Amman)

Bushra Zalloom 

Architecture Department, Zarqa University, Zarqa 13132, Jordan

Corresponding Author Email: bzalloom@zu.edu.jo



<https://doi.org/10.18280/ijstdp.180716>

ABSTRACT

Received: 7 February 2023

Accepted: 21 May 2023

Keywords:

COVID-19, public parks, social role, social distancing, social life

In early 2020, COVID-19 rapidly swept across the globe, significantly impacting human behavior. While a few studies worldwide have assessed the transformation of public parks' roles during this period, this subject has remained unexplored in Jordan. This study aims to investigate the transformation of the social role of public parks during the pandemic, focusing on King Husain Park in Amman. This transformation was assessed by using four social variables that contribute to creating successful public parks: social infrastructure, sociocultural value and attractiveness, lifestyle and sociability, and social capital. A mixed-methods approach was adopted for a better understanding of this transformation, involving field observations and an online questionnaire to assess the pandemic's impacts on the park's social role. The results showed that the park's role as a social integrator was limited during 2020 and 2021 due to repeated lockdowns. The findings revealed that the pandemic had extensive impacts on the social role of public parks compared to non-pandemic periods. The study confirmed that creating sociable parks is a critical issue, as they must cater to the community's needs throughout various circumstances.

1. INTRODUCTION

Public parks are no longer perceived as attractive areas for a picnic, but rather as an essential system within the urban fabric, as it creates an opportunity for the psychological revitalization of daily life [1, 2]. It is a place for physical activity [3], recreation, relaxation, interactions [4], and social cohesion [5]. Public parks have always been an important component that played various roles and provided spaces for physical and social activities; they formed the lung of the city that helps in creating healthy, productive, and enjoyable spaces, however, during COVID-19 all these characteristics have altered, and the role of the public parks has transformed. While some parks became deserted during the pandemic, others remained busy and well-used public areas. Although parks can be a safe outdoor option for socially distant gatherings and recreation, Cities have to take public health measures to stop the spread of COVID-19. Some cities modified their parks to promote health recommendations, such as adding social distancing circles (Figure 1), and other cities created golf courses or transformed vacant lots into new parks. As mentioned in the abstract section, it will be rather easy to follow these rules as long as you just replace the "content" here without modifying the "form".

Public parks and other green places have been seriously threatened due to COVID-19 inflation and the restrictions created during this period [6, 7]. Worldwide, a few studies recorded the impacts of these strict restrictions that were enforced during the pandemic on the social role of public parks around the world [8-13], however, in Jordan, this subject remained unexplored. In Jordan, the government implements

various actions to control and minimize the virus transition, these actions mainly enhance social distancing, ban public gatherings, and implement fines on anyone who tries to break these actions. Social distancing was a major action affecting people's communication and minimizing their interaction within a certain area. Social distancing means keeping space between yourself and other people outside of your home, therefore, you have to stay at least 1.5 meters from other people, not gather in groups, and stay out of crowded places [14]. The furniture and other infrastructure details at public parks in Jordan are not prepared, designed, or distributed in a way that supports these actions, as a result, public parks and all their facilities have been closed and their role has been changed. The pandemic has also brought many changes to people's lives [9, 11, 15-17], thus, from 17 March 2020 to 15 August 2020, all public gatherings were banned by the government, and all parks, shopping malls, restaurants, and cafes were completely closed in Jordan to decrease the spread of the virus, afterward the government decided to avoid the complete ban; because of its economic, social and psychological effects on citizens, they decided to isolate any governorate, city or region in which infections are increasing. It was only allowed for pedestrians to move around from 8:00 am to 7:00 pm. Again on 9 October 2020, the complete restriction was implemented on weekends, from Thursday morning to Saturday evening. This scenario of full lockdown and partial lockdown was repeated many times, till the country was fully opened on 1st September 2021 after about 17 months of lockdown. During this era, Amman among other Jordanian cities had struggled to produce sociable spaces that support social life and fulfill people's needs.



Figure 1. Drawing social distancing circles at public parks
Source: [7]

Considering this research gap, this study aims to investigate the transformation of the social role of public parks during the pandemic and non-pandemic periods in Jordan; and to understand the impact of COVID-19 on the usage of and accessibility to these parks. The pandemic period in this study extended from 17 March 2020 to 1st September 2021, other dates before and after this period can be considered non-pandemic periods. King Hussein Public Park in Amman was selected as a case study because it is the first mega-urban park that serves the city. The study started in 2019 before the inflation of COVID-19 and continued post the pandemic. In March 2020, Amman City locked down, and all parks were closed and transformed into vacant areas. However, at the beginning of 2021, some parks start opening gradually for a limited time during the day. Accordingly, the major zones at King Hussein Park were assessed by using the same variables of social characteristics through pandemic and non-pandemic periods.

2. METHODOLOGICAL APPROACH

The exploratory study design was used in this study, and a mixed approach was adopted where both qualitative and quantitative study approaches were used to help in a better understanding of the transformation of the public park's social role since COVID-19. The mixed methods approach suits the nature of the social study in gathering and analyzing the data. It is used to increase the accuracy of the findings and to overcome the disadvantages of using only qualitative or quantitative methods [18]. Moreover, the roles of parks have been explored by referring to different pieces of literature. Previous studies helped in summarizing the main social variables that are used in assessing urban spaces. These variables are the social infrastructure, sociocultural value and attractiveness, lifestyle and sociability, and social capital [19]. The number of pages for the manuscript must be no more than ten, including all the sections. Please make sure that the whole text ends on an even page. Please do not insert page numbers. Please do not use the Headers or the Footers because they are reserved for technical editing by editors.

The methodology of this study is based on testing these four variables that significantly affect the social role of the park pre and post-COVID-19. Accordingly, the research structure is divided into three phases: 1. Park selection: In this phase a comparative analysis of King Hussein Park's role pre and post-the-pandemic is conducted, 2. Data collection: A field

observation at King Hussein Park and an online questionnaire are used in collecting the data. 3. Results and discussion: The collected data are analyzed and discussed in a comprehensive way to achieve the research's aim.

2.1 Park selection

King Hussein Public Park is located in the Dabiq area at King Abdullah II Street. The park is created in memory of the Late King Hussein in 2005 and is considered one of the landmarks in Amman [20]. The park aims to represent the cultural heritage of Jordan in a contemporary manner, it occasionally celebrates religious and national days, and the locals are attracted to its spaces, particularly the play areas, where the majority of the carnivals are held. King Hussein Public Park is selected because it is the first mega-urban park that serves Amman, the capital of Jordan. King Hussein Park occasionally celebrates the national and religious days in Christmas, the Holy month of Ramadan, and Muslim feasts, therefore, locals have a clear idea about its spaces, especially the playground areas, where most festivals were held.

King Hussein Public Park covers an area of 62 hectares, which includes leisure parts such as playgrounds, sports facilities, green spaces, and other recreational spaces. The park also includes cultural and educational facilities such as the King Hussein Mosque, the Cultural Village, the Historical Passageway, the Royal Automobile Museum, and the Children's Museum. It serves as a venue for several public activities such as sports events and cultural festivals. The park has two main gates, the first one is on King Abdullah II Street, and the second is on Saeed Khair Street. Figure 2 illustrates the main areas of King Hussein Park where the social variables were tested. It further indicates the service road that runs around the park and divides its spaces into various zones. On one side there is an open vacant area with a limited number of trees, on the other side there are three important destinations which are: Automobile Museum, King Hussein Mosque, and the Children's Museum. The site analysis has shown that the majority parts of the park are physically separated from the surrounding areas.



Figure 2. The site plan of King Hussein Park
Source: Google Earth, edited by the author

Table 1. The key indicators that underpin each social variable

Social Infrastructure	Sociocultural Value and Attractiveness	Lifestyle and Sociability	Social Capital
Open spaces for sociability	Attractiveness (safe, clean, green, spiritual)	Diversity	Amusement
Connection	Psychological needs	Friendly	Public awareness
Access to education and health services	Sense of security	Number of women, children, elderly	Partnership
Accessibility	Sense of belonging	Social inclusion	Voluntary work
Walkability	Preservation of local identity	Consumption pattern	Education
Transportation	Sense of stability	Street life day and night	Employment Opportunities

A comparative analysis of the role of King Husain Park pre and post-COVID-19 was conducted to discover the transformation of the park's role and the main social variables were used to assess this transformation (Figure 3).

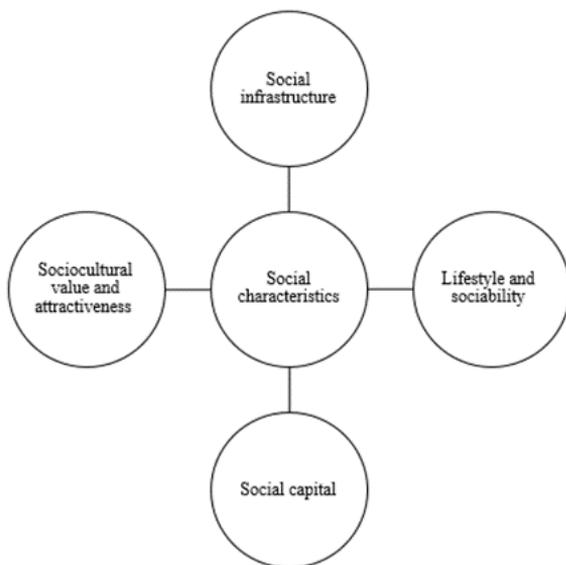


Figure 3. The main social variables

2.2 Data collection

The data was collected pre and post-COVID-19 through a field observation at King Husain Park, however, an online questionnaire was conducted post-COVID-19. Observation helps in understanding users' behavior while they are in a natural environment, such as public parks. Whereas, the questionnaire helped in analyzing individuals' viewpoints about the park facilities. To better comprehend the aims of the research, the questionnaire was first created in English and then translated into Arabic. The closed-ended questionnaire is comprised of five parts, the first part mainly covered general information about the participants, such as gender, age, and education level. The other four parts include 24 questions that cover the main social variables; namely, social infrastructure (6 questions), sociocultural value and attractiveness (6 questions), lifestyle and sociability (6 questions), and social capital (6 questions). Table 1 highlighted the key indicators that underpin each variable and were used in the assessment. The participants were required to answer the questions based on two options: yes or no.

The social role of King Husain Park was studied pre-COVID-19 by conducting a field observation for its main parts pre-COVID-19 from June 2019 to October 2019 to assess the social role of the park using the social variables. The same social variables were tested again post the lockdown to explore

their effects on the social role of the park. Moreover, an online questionnaire was uploaded on "Google Forms" post the pandemic. A selected group of 100 participants were randomly chosen to assess the social variables of the park and explore the transformation of its social role. About 20% of them were children (ages 10 to 18), 40% were youth (ages 19 to 40), 25% were aged between 41 and 60, and 15% were above 60 years old.

3. RESULTS AND DISCUSSIONS

All the collected data has been further analyzed and evaluated to identify the impact of COVID-19 on the role of public parks. During this phase, the collected data from different resources were put into play.

3.1 Observation outcomes

The case study analysis explains the outcomes of observing the main areas of the project to assess the transformation of its social role pre and post-COVID-19; this includes the Cultural Village, the Historical Passageway, the King Husain Mosque, the Automobile Museum, the Children Museum, the decorated gardens, along with the sports fields, and the additional zone that was created during the inflation and known as the Medical zone.



Figure 4. The Cultural Village consists of the main square surrounded by Jordanian handicraft shops and galleries
Source: The author

1. The Cultural Village consists of the main square surrounded by Jordanian handicraft shops and galleries (Figure 4). This zone is used to introduce the local heritage and culture to visitors through a set of handicrafts [20]. Local

stones and metallic elements are used for cladding to enhance the building's integration with the surrounding area. It further includes well-developed coffee shops and two restaurants with a view overlooking the city on the eastern side of the village (Figure 5). Observing the main areas of the cultural village, the handcraft shops, and the galleries pre and post-pandemic shows that the area is unlivable as many shops were closed and unoccupied. The same situation continued post-COVID-19 (Figure 6).



Figure 5. The coffee shop and restaurants became empty during COVID-19
Source: The author



Figure 6. The handcraft shops become unoccupied and closed
Source: The author



Figure 7. The Historical Passageway is a forbidden territory to visitors pre and post-COVID-19
Source: The author

2. Historical Passageway of the parks contains a mural constructed on a 488-meter wall that presents a chronological timeline of Jordan's history, beginning from the origin of humans to the present time. It began with the Stone Age and carried on through the Iron, Copper, and Bronze Ages [20]. The mural contains several paintings, decorations, sculptures, and metallic formations designed by several local artists. The observation shows that the Historical Passageway is a closed area around the years pre and post-COVID-19. It is a forbidden territory for visitors, as signage and barriers forbade them to enter this zone (Figure 7).

3. Sports Fields include football, basketball, volleyball, and tennis courts. Observing the sports field pre-COVID-19 showed that the area is livable during both day and night but is located far from other facilities such as restaurants, cafes, and toilets (Figure 8). During COVID-19, this zone transform into a vacant area, however, post the pandemic the area was converted into a livable space.



Figure 8. The sports fields during COVID transformed into vacant areas
Source: The author



Figure 9. The area lacks seating, thus, people sit at the parapets
Source: The author

4. The decorated gardens symbolize the heart of the Park, with an approximate area of 280000 m² [20]. The gardens are made of two main axes; the vertical passageway which runs upward from the entrance court to the Historical Passageway; and the second includes the horizontal axis, which goes from the Cultural Village to the Islamic park. The passages are broken by water elements, plants, and trees, terraces of various

heights, arbors, and sand hills. The division of the gardens reveals the natural variety of Jordan. Observing the decorated gardens pre-COVID-19 confirms that the area is attractive to people and provides a pleasant environment for social interactions. However, the area lacks toilets and comfortable seating, therefore, people are sitting at the parapets surrounding the playing zone (Figure 9). Post-COVID-19, the decorated gardens, especially the huge areas in its northern part, became totally empty and unsafe, especially for women and children, it is mainly used by visitors for picnics in holidays.

5. The Royal Automobile Museum was established to exhibit a collection of the Late King's automobiles. The museum opens from 10:00 am to 7:00 pm and the main holiday is on Tuesday. People need to pay fees of about three dinars per person to enter the museum. The design of the building moves across as mass is integrated into the surrounding environment and merges through the planted hills (Figure 10). Observing this part pre and post COVID-19 confirms that it can be considered as a livable space as many visitors enjoy its spaces. The museum offers nice spaces for socialization, as it includes a traditional tent inside where visitors can sit, enjoy, and capture the Jordanian culture (Figure 11).



Figure 10. The Royal Automobile Museum
Source: The author



Figure 11. The traditional tent represents the Jordanian culture inside the museum
Source: The author

6. The Children's Museum is located alongside the Royal Automobile Museum. The building includes toys, exhibitions,

art equipment, games, and all kinds of fun and education for children (Figure 12). It opens during the day, and people need to pay a fee of 3JD to enter the museum. Since the museum is an enjoyable destination for children, the location of the given area is still questionable. In other words, it is located far from children's play area which apparently restricts their approach without parents. The observation of the Children's Museum pre and post-COVID-19 confirms that it is still an attractive place for all, however, people's attitude has changed and social distancing is clearly shown in this zone even post the pandemic (Figure 13). Likewise, many colorful signs are spread inside the building to encourage visitors to wear masks, keep social distance, and use hygiene (Figure 14).



Figure 12. The Children's Museum
Source: The author



Figure 13. Social distancing is clearly shown at the Children Museum
Source: The author

7. The King Husain Mosque is located at the highest point of the park. The minarets of this mosque were initiated in 2006 and are considered a landmark in the city [20]. The project emphasizes Islamic architectural elements, such as the courtyard, the vaults, the arches, the proportions, and the use of Islamic ornaments (Figure 15). The mosque was open for all prayers pre-COVID-19, but during COVID it is closed, and then it opened gradually for Friday prayers with maintaining social distancing. Today, it opens again for all prayers.

8. Medical zone: During the inflation of COVID-19, the park served as a Medical Center for COVID-19 injections. The created zone consists of many movable tents, and as visitors

enter the park's main gates they can see many signs that guide them to the Medical zone (Figure 16). This zone opened during the pandemic and closed afterward, and all tents were relocated outside the park.



Figure 14. Colorful signage inside the building to encourage visitors to wear masks, keep social distance, and use hygiene
Source: The author



Figure 15. King Husain bin Talal Mosque emphasizes Islamic architecture
Source: The author



Figure 16. The Medical zone
Source: The author

Post the pandemic, King Husain Park opened all its facilities to the public, various signs are spread in the park and used to give health instructions on how to deal with COVID-19, encourage visitors to wear masks, clean their hands with hygiene, and maintain social distancing (Figure 17).



Figure 17. Signs with various designs are spread outside the buildings
Source: The author

3.2 Survey outcomes

The survey questions were based on analyzing the questionnaires emerging from assessing the main social variables that combine social infrastructure, sociocultural value and attractiveness, lifestyle and sociability, and social capital.

3.2.1 Social infrastructure

The opinions of participants about the social infrastructure of King Husain Park were inquired by asking them 6 questions with the answer yes or no. These questions focus on access to educational facilities, and access to health services. It also studies the connection among the park's facilities and if it provides safe open spaces and enhances sociability.

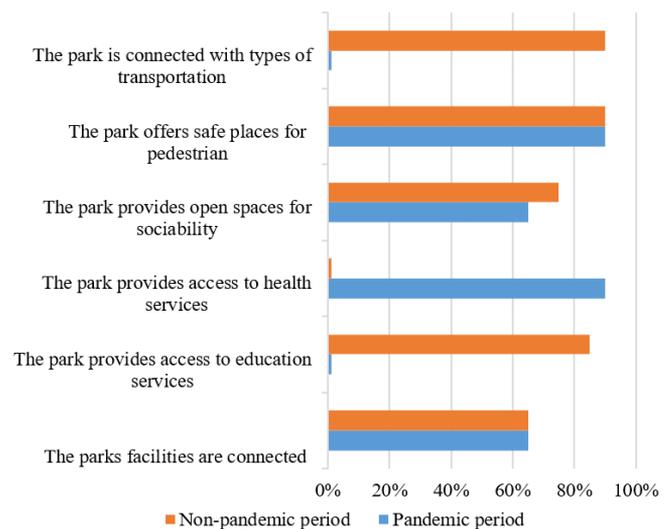


Figure 18. Social infrastructure: Analyses of (Yes) responses

The questionnaire analysis is conducted to assess the transformation of the social infrastructure during pandemic and non-pandemic periods. The survey outcomes confirm that

during the pandemic periods the park became inaccessible and disconnected from its surrounding, people were allowed only to walk through, and other means of transportation were prohibited, accordingly, the number of visitors decreased. However, during non-pandemic periods, public transportation can easily reach the park with minimal cost and the park offers safe places for pedestrians, especially elders, and children.

The educational facilities were closed during the lockdown, thus the park's role as an educational hub was altered. The park played a new role that was not known before as it became a medical zone for surrounding neighborhoods and provided health services as well as COVID-19 injections. Applying the actions of social distancing minimized the logic of the sociability of the park. Still, the park was considered by 90% of the participants as a safe place for pedestrians during all periods (Figure 18).

3.2.2 Sociocultural value and attractiveness

The opinion of the participants about the Sociocultural Value and Attractiveness of King Husain Park was inquired by asking them 6 questions with the answer yes or no. Participants were asked about the effect of the park on their sense of belonging and their sense of security, the park's attractiveness, and its role in preserving Amman's identity and fulfilling the users' needs.

During the pandemic period, the park played an essential psychological role, 90% of the participants highlight that it fulfills their psychological needs. The participants are satisfied with the sociocultural value and attractiveness of King Husain Park. About 90% of the participants believed that the design of buildings and the outdoor spaces at King Husain Park suits Amman's identity, especially the Holy Mosque, the cultural village, and the historical passageway. According to the survey, the park's role in enhancing the sense of belonging did not affect by the lockdown. However, their sense of security and the park's attractiveness decreased during the pandemic period. On the other hand, 75% of them believe that the park enhances safety in surrounding areas during the pandemic (Figure 19).

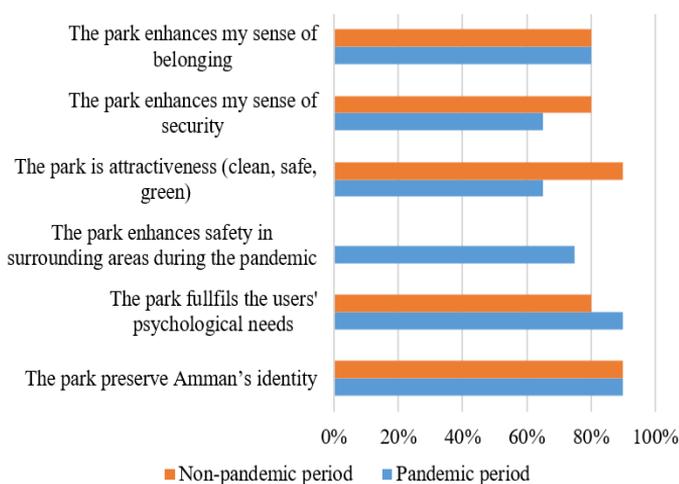


Figure 19. Socio-cultural value and attractiveness: Analyses of (Yes) responses

3.2.3 Lifestyle and sociability

The opinion of participants about the lifestyle and sociability of King Husain Park, the relation between the

variety of spaces, and if the space organization in the park is fostering street life day and night, and increasing consumption patterns were inquired by asking them 6 questions with the answer yes or no. Participants were also asked if they agree that the park enhances social inclusion, enhances friendship, and provides welcome spaces for elders, women, and children.

The results showed that lifestyle and sociability were negatively affected by the pandemic. The park became an unwelcome space for elders, women, and children, accordingly, the social inclusion and friendship opportunities decreased. Similarly, the consumption pattern decreased as all shops, restaurants, and cafes are closed. Street life was also negatively affected during the pandemic period (Figure 20).

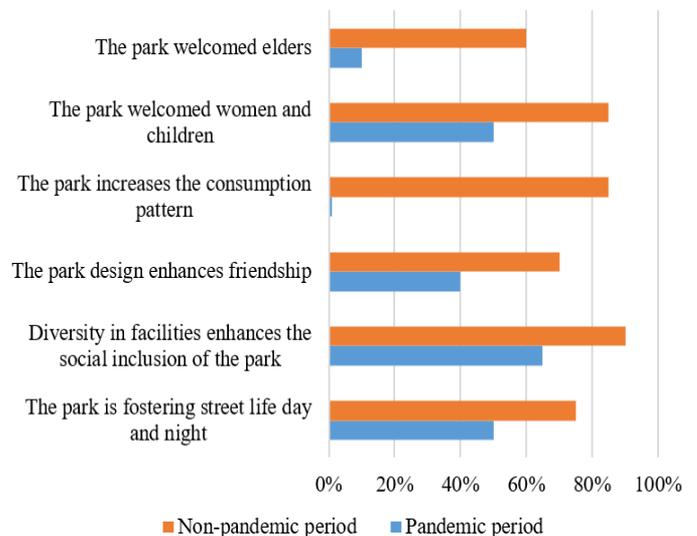


Figure 20. Lifestyle and Sociability: Analyses of (Yes) responses

3.2.4 Social capital

The opinions of participants about social capital were obtained by asking them 6 questions with the answer yes or no. The participants were asked if the park increased employment opportunities, partnership opportunities, education opportunities, and voluntary work.

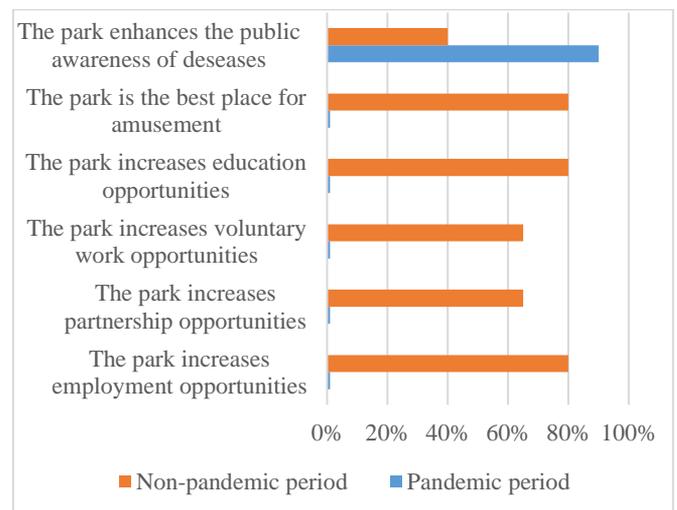


Figure 21. Social capital: Analyses of (Yes) responses

The results show that social capital was negatively affected

during the pandemic period. Employment opportunities, partnership opportunities, education opportunities, and voluntary work are missed during the pandemic because all services are closed. The park is likely to become a livable space only during non-pandemic periods in summer and spring (Figure 21).

The above outcomes, based on observation and online survey, confirmed that social capital, lifestyle, and sociability are the main social characteristics that are negatively affected by COVID-19. The social variables have been shown to play a dynamic role in assessing the transformation of the sociable role of the park during a pandemic and non-pandemic period. The park includes various social infrastructures such as pedestrian-friendly areas, safe walkways, and sociable open spaces that inspire visitors to socialize and appreciate their city, however, the lockdown and the actions implemented by the government transform the use and perception of these variables.

The analyses confirm that the production of esthetically pleasing outdoor spaces in King Husain Park is anchored with providing high-quality spaces that attract people, create public space, and support public life. The organization of the spaces within King Husain Park emphasizes the inclusiveness of the open public space and increases spatial integration within the city, as shown in the site analysis. Likewise, inclusive landscapes positively affect the sense of space, which is achieved by creating an integration between different functions that serve locals. The participants proposed increasing the cultural activities that enhance sociability. On the other hand, some locals believe that King Husain Park increases the consumption culture among them, as it includes different amenities that will attract all strata, such as restaurants and cafes. Some participants believe that creating these spaces of consumption increases the unwanted behaviors that already exist in the western parts of Amman, such as; smoking and gazing at women. This affects their sense of security and belonging, making this area less attractive to them. Therefore, consumption facilities should be minimized or replaced by entertainment facilities.

Studying the transformation of the park's role pre and post-COVID confirms that the social distancing concept affects people's behavior and attitude inside buildings such as the Children's Museum and the Automobiles Museum more than other open spaces.

4. CONCLUSIONS

The study has explored the transformation of the social role of public parks during pandemic and non-pandemic periods. It has investigated the relationship between four main variables that contribute to the creation of successful public parks, these include the social infrastructure, sociocultural value and attractiveness, lifestyle and sociability, and social capital. The study found that the effect of COVID on these variables differ, and the most affected ones were social capital, and lifestyle and sociability. It also found that the restrictions implemented by the government during the pandemic controlled the spread of COVID but negatively affected social life. During the pandemic, the role of King Husain Park totally transformed from a place for leisure to a place for medical treatment. It became a center for injection, and locals are forbidden to use the park facilities, they are only allowed to drive through at a specific time to take the COVID injection. However, during

the non-pandemic period, it opens its doors as a sociable park that attracted all visitors and encourage various activities.

These results confirmed that creating sociable public parks is a critical issue as it must cater to the needs and expectations of all the users during various circumstances. The study confirms that designers should create spaces that fulfill the desires of the users by understanding their needs, aspirations, and motivations. These needs are anchored with various factors such as the health condition, and the cultural background.

5. LIMITATIONS

Although this study is essential for realizing the role of urban parks as a social hub, it also had some limitations. First, the influence of the sociodemographic characteristics such as gender, and educational level of the participants are not considered during the analyses as the study group was selected randomly, therefore, the collected samples may not be representative. Secondly, a few samples were collected due to the pandemic. Third, the questionnaire survey was implemented post-pandemic and participants were asked for their opinions pre and post-pandemic; therefore, a recall bias may be present. Fourth, the study focuses only on one park due to resource time and limitations.

In spite of these limitations, the findings of this study will help in exploring the transformation of the social role of public parks during the pandemic and non-pandemic periods, and understanding the impact of COVID-19 on the usage of and accessibility to these parks.

ACKNOWLEDGMENT

This research is funded by the Deanship of Research at Zarqa University in Jordan.

REFERENCES

- [1] Sepe, M. (2020). Regenerating places sustainably: The healthy urban design. *International Journal of Sustainable Development and Planning*, 15(1): 14-27. <https://doi.org/10.2495/SDP-V15-N1-14-27>
- [2] Naser, R.A., Ahma, S.S., Ahmed, A.Z. (2013). Physical activity and human comfort correlation in an urban park in hot and humid conditions. *Procedia-Social and Behavioral Sciences*, 105: 598-609. <https://doi.org/10.1016/j.sbspro.2013.11.063>
- [3] Zalloom, B., Tarrad, M. (2020). The role of public spaces in reviving the historical areas: The case study of As-Salt City in Jordan. *International Journal of Sustainable Development and Planning*, 15(3): 361-367. <https://doi.org/10.18280/ijstdp.150313>
- [4] El-Husseiny, M.A., Kesseiba, K. (2012). Challenges of social sustainability in neo-liberal Cairo: Re-questioning the role of public space. *Procedia-Social and Behavioral Sciences*, 68: 790-803. <https://doi.org/10.1016/j.sbspro.2012.12.267>
- [5] Tabassum, S., Sharmin, F. (2013). Accessibility analysis of parks at urban neighborhood: The case of Dhaka. *Asian Journal of Applied Science and Engineering*, 2(2): 48-61.

- [6] Basu, S., Nagendra, H. (2021). Perceptions of park visitors on access to urban parks and benefits of green spaces. *Urban Forestry & Urban Greening*, 57: 126959. <https://doi.org/10.1016/j.ufug.2020.126959>
- [7] Urban Land Institute. (2021). The pandemic and the public realm. https://knowledge.uli.org/-/media/files/research-reports/2021/april-2021-uli-the-pandemic-and-the-public-realm_interactive.pdf?rev=fba0a9e0c8b34fdaa349445b3a844989, accessed on Apr. 18, 2023.
- [8] Addas, A., Maghrabi, A. (2022). How did the COVID-19 pandemic impact urban green spaces? A multi-scale assessment of Jeddah megacity (Saudi Arabia). *Urban Forestry & Urban Greening*, 69: 127493. <https://doi.org/10.1016/j.ufug.2022.127493>
- [9] Larson, L.R., Zhang, Z., Oh, J.I., Beam, W., Ogletree, S.S., Bocarro, J.N., Lee, K.J., Casper, J., Stevenson, K.T., Hipp, J.A., Mullenbach, L.E., Carusona, M., Wells, M. (2021). Urban park use during the COVID-19 pandemic: Are socially vulnerable communities disproportionately impacted? *Frontiers in Sustainable Cities*, 3: 710243. <https://doi.org/10.3389/frsc.2021.710243>
- [10] Liu, S., Wang, X. (2021). Reexamine the value of urban pocket parks under the impact of the COVID-19. *Urban Forestry & Urban Greening*, 64: 127294. <https://doi.org/10.1016/j.ufug.2021.127294>
- [11] Noszczyk, T., Gorzelany, J., Kukulska-Kozielec, A., Hernik, J. (2021). The impact of the COVID-19 pandemic on the importance of urban green spaces to the public. *Land Use Policy*, 113: 105925. <https://doi.org/10.1016/j.landusepol.2021.105925>
- [12] Erdonmez, C., Atmiş, E. (2021). The impact of the Covid-19 pandemic on green space use in Turkey: Is closing green spaces for use a solution? *Urban Forestry & Urban Greening*, 64: 127295. <https://doi.org/10.1016/j.ufug.2021.127295>
- [13] Ugolini, F., Massetti, L., Calaza-Martínez, P., Cariñanos, P., Dobbs, C., Ostoić, S.K., Marin, A.M., Pearlmutter, D., Saaroni, H., Šaulienė, I., Simoneti, M., Verlič, A., Vuletić, D., Sanesi, G. (2020). Effects of the COVID-19 pandemic on the use and perceptions of urban green space: An international exploratory study. *Urban Forestry & Urban Greening*, 56: 126888. <https://doi.org/10.1016/j.ufug.2020.126888>
- [14] CDC. (2021). Centers for Disease Control and Prevention. <https://www.cdc.gov/coronavirus/2019.html>, accessed on Mar. 18, 2021.
- [15] Bravo, L., Tieben, H. (2020). A year without public space under the COVID-19 pandemic. *The Journal of Public Space*, 5: 1-14. <https://doi.org/10.32891/jps.v5i3.1425>
- [16] Hu, Z., Lin, X., Chiwanda Kaminga, A., Xu, H. (2020). Impact of the COVID-19 epidemic on lifestyle behaviors and their association with subjective well-being among the general population in mainland China: Cross-sectional study. *Journal of Medical Internet Research*, 22(8): e21176. <https://doi.org/10.2196/21176>
- [17] Van der Werf, E.T., Busch, M., Jong, M.C., Hoenders, H.R. (2021). Lifestyle changes during the first wave of the COVID-19 pandemic: A cross-sectional survey in the Netherlands. *BMC Public Health*, 21(1): 1226. <https://doi.org/10.1186/s12889-021-11264-z>
- [18] Clark, T., Foster, L., Sloan, L., Bryman, A. (2021). *Bryman's Social Research Methods*. 6th Edition, Oxford University.
- [19] Zalloom, B. (2020). Enhancing tourism by reconnecting the fragmented landscape of wadi araba in Jordan. *Journal of Urban Planning and Development*, 146(3): 05020010. [https://doi.org/10.1061/\(ASCE\)UP.1943-5444.0000592](https://doi.org/10.1061/(ASCE)UP.1943-5444.0000592)
- [20] Bany, B. (2018). Place Attachment in Urban Park Environments: The Case of King Husain Public Park in Amman, Jordan. In the scientific and executive committee of the international conference on civil engineering, architecture and urban planning elites, November 2018, Paris, France. <http://dx.doi.org/10.33422/5th-caue.2018.02.41>