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Influence of Spatial Attributes on Human Behavior in Complying with COVID-19 Health Protocols in The City Park of Puputan Badung Denpasar Bali

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Abstract

The study aims to determine the most effective spatial setting for the fitness spots with pandemic mitigation in the city park of Puputan Badung Denpasar Bali as well as to identify various responses of human behavior in complying with health protocols. A mixed-method strategy was utilized, where a quantitative technique was used to determine the level of compliance. A qualitative inquiry with a case study method was also used to assess the influence of spatial attributes on human behavior. The respondents were selected using accidental sampling during peak times for a week. The sport activities observed were fitness, which was available in several spots of parks. Based on human behavior theories, the fitness space equipped with COVID-19 mitigation measures has not provided optimal stimuli to the people in complying with health protocols, leading to low compliance levels. The results of this study can be used as a reference to evaluate the effectiveness of implementing pandemic mitigation in the city park of Puputan Badung and other city parks with similar characteristics from an architectural perspective.

Keywords: fitness activities; COVID-19 health protocols; spatial attributes; human behavior; city parks

1. Introduction

During the COVID-19 pandemic, many people have turned to city parks for exercise, which is a way to maintain their immune systems and reduce the risk of contracting the virus. Outdoor activities have also become a popular choice for individuals during the pandemic (Doubleday et al., 2020; Lai et al., 2020). Furthermore, city parks typically consist of various outdoor spaces that are designed for specific activities systems (Aggita et al., 2019; Bunakov, 2019;

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Rita, 2017). These spaces are interconnected within a spatial layout system and serve as locations for various engagements. The outdoor areas in city parks are used for general operations as well as specific engagements, and they are categorized based on their roles, features, elements, and activities (Bunakov, 2019; Porajouw et al., 2017; Smiley et al., 2019).

City parks are crowded spaces that are essential to the community, and they must be safe from COVID-19 virus (Venter, 2020). Previous studies stated that they have a positive impact on community health (Andrusaityte, 2020; Plunz, 2019). Therefore, the government and the community need to make efforts to mitigate COVID-19 pandemic, and the spatial setting of city parks must support these mitigation efforts. Society plays a role in preventing the spread of the virus by adhering to health protocols, and particular attention must be paid to human behavior.

One of the city parks in Denpasar is I Gusti Ngurah Made Agung or Puputan Badung. Despite the COVID-19 pandemic, it remains popular among people as it offers complete facilities for recreational activities, socialization, and exercise, which are crucial for maintaining a healthy immune system and body. The Government of Denpasar City has implemented mitigation efforts to prevent this area from becoming a new cluster to spread the virus. Playgrounds for children, the outdoor fitness facilities, parks benches, and gazebos are examples of some places, where mass gatherings can occur and potentially facilitate transmission. The importance of risk factors during the Covid-19 pandemic is the main dilemma in restricted area activities (Suardana & Kristianto, 2022). Observation data showed that several mitigation efforts have been implemented, including the provision of handwashing facilities, the media of information on preventing contamination, and placing minimum distance markers at some facilities. However, these efforts have not produced the desired results due to the low compliance with protocols, especially during sports activities. This behavior can potentially increase the spread of COVID-19 in the community.

Several studies stated that it is important to pay attention to individuals who do not comply with health protocols while engaging in activities at city parks. Therefore, the community's response to COVID-19 pandemic mitigation in this area must be analyzed. It is also important to identify human behavior during exercise, as well as influence of spatial attributes. This can aid the development of appropriate spatial settings for the study locus, as well as the identification of factors affecting the community's compliance.

Spatial attributes theories are often used as references to examine influence of spatial setting in the city park of Puputan Badung on human behavior in implementing COVID-19 health protocols during the fitness

activities. A preliminary investigation showed that while many people visited the area to relax, a significant number also engaged in sports, such as fitness, walking, jogging, playing futsal, and running. The fitness was investigated as it is riskier compared to other sport activities. The use of related equipment in an alternating manner along with the tendency of people to gather at specific equipment, such as queuing, sitting, and resting, creates a significant potential for the formation of new clusters in the spread of COVID-19. This indicates that spatial setting plays an important role in determining the level of compliance with pandemic mitigation efforts.

Based on the findings above, it is important to investigate the mechanism through spatial attributes of the fitness areas in city Parks of Puputan Badung influence human behavior in following health protocols. Furthermore, health protocols, such as washing hands, wearing masks, and maintaining physical distancing, can control the spread of COVID-19 by preventing healthy individuals from inhaling the coughs and breaths of infected people. The virus can be transmitted indirectly through contact with contaminated objects or touching exposed surfaces, where it can survive for several hours to days.

This study aims to: 1) discover setting of the fitness space with COVID-19 mitigation in the form of the provision of handwashing facilities, the medium of information on the prevention of transmission, and minimum distance markers for benches in the seating area; 2) identify various responses from individuals in implementing health protocols; and 3) determine influence of spatial setting on human behavior in compliance with health protocols during the fitness activities in city parks. The results can be used as a basis for re-evaluation and improvement to support COVID-19 pandemic mitigation in city parks, especially those providing the fitness facilities.

2. Literature Review

Over the years, there has been an increase in the number of studies on city parks and their interlinks. Furthermore, several studies have reported the positive effects of urban parks, particularly on public health, socioeconomic, and environmental perspectives (Larson, 2016; Sherer, 2003; Xie, et al., 2020; Wolch, et al., 2014). Parks are commonly provided as public spaces that improve the quality of a city (Lai et al., 2020; Plunz et al., 2021). They also serve as a location for playing, exercising, having social interaction, and getting fresh air (Lai et al., 2020; Porajouw et al., 2017; Plunz et al., 2021). Based on previous studies, parks in the inner city can improve mental and physical community health (Sang et al., 2016) as well as society's welfare (Jenny et al., 2016). People often visit these public spaces due to the visually attractive nature, beautiful gardens (Andrusaityte et al., 2020; Bunakov et al., 2019), and complete infrastructure

(Anendawaty et al., 2017; Smiley et al., 2016). Fulfilling community social needs requires availability of quality public space, such as city parks, which can accommodate users of all age groups and various forms of social interaction (Agusintadewi, et al., 2022). Previous reports also revealed that city parks serve as a lung in the middle of urban areas and can help to mitigate growing problems in large metropolitan areas, such as global warming, negative space, and pollutants (Anendawaty et al., 2017; Venter et al., 2020).

In terms of the outbreak of COVID-19, attention must be paid to spatial attributes of city parks, where people often carry out various activities (Sung, et al., 2022). Furthermore, there is a need to improve the regulation of human behavior during the implementation of COVID-19 health protocols and pandemic mitigation. Previous studies have shown that by focusing on the type, functionality, and accessibility of city parks, it is possible to make them robust to the challenges posed by the pandemic (Banai, 2020; Cheng, et al., 2021; Lopes et al., 2021; Sung, et al., 2022). Wang et al. (2020) suggested that individual prevention of COVID-19 can be carried out in various ways, including washing hands, wearing a mask, maintaining physical distancing, keeping the cleanliness of surroundings, and maintaining stamina. In 2020, the Ministry of Health Republic of Indonesia established COVID-19 health protocols for all situations during the pandemic, including all outdoor activities. The policy is known as 3M (*Mencuci tangan, Memakai masker, Menjaga jarak;* Washing hands, Wearing a masker, Weeping physical distancing), which aims to prevent the spread of the virus. Due to the implementation of these protocols, spatial setting in city parks must be improved with pandemic mitigation (Banai, 2020; Sung, et al., 2022). Therefore, the 3M health protocols became a reference for this current study.

During activities in city parks, people are often influenced by their behavior in using the spaces (Aggita et al., 2019; Rita, 2017). Zeisel (1984) reported that there is a relationship between human behavior and spatial attributes. The study also revealed that setting changes caused by human activities influence their attitude, including the conduct relating to spatial uses. Another expert, Bandura (2001) stated that community behavior reflects the interaction among the people as well as their relationship with the physical environment. This theory was developed from a mass communication perspective, and several studies have formulated Bandura's opinion from learning and education viewpoints (Devi, 2017; Nabavi, 2012).

Based on previous studies, activities often occur in a specific setting system. Furthermore, behavior is an individual's response or reaction to an external stimulus. This definition is known as the "S-O-R" or "Stimulus-Organism-Response" theory, which became the basic theory in environmental psychology (Jacob, 2002; Laato, et al., 2020). Behavior change process is essentially similar

to human learning (Chen, King&Suntikul, 2019; McQuail, 2010), and consists of four stages. In stage 1, a stimulus is given to a community, which can be accepted or rejected. The rejection of this stimulation indicates that it is not effective in influencing the community. In stage 2, the stimulus is received and understood, and the process continues. During stage 3, the society manages the stimulus and behaves based on its accepted inspiration. In stage 4, the motivation can change the community's behavior with the support of some facilities and the environment. Another study supporting the S-O-R theory stated that behavior change is influenced by external factors, namely stimuli from the physical environment (Chen, King & Suntikul, 2019). This is also relevant to other views that attitude is related to human interaction with the physical environment to influence each other (Ayoko & Ashkanasy, 2019; Olufemi, 2012).

Based on these findings, behavior of a community can change when the stimulus given is stronger or more convincing, and the level of improvement depends on the quality of the impulse given. Meanwhile, Weisman (1981) stated that three components influence the interaction between human and their environment (the model of environmental behavior system), namely (1) the physical setting, (2) behavioral phenomena of an individual using physical or spatial attributes for a particular purpose, and (3) the organization or the owner, who has a relationship with the physical setting. Weisman further categorized fourteen attributes of space, as described in Table 1.

Table 1. Spatial Attributes from Weisman

No.	Spatial Attributes	Description
1	Comfort	An environmental situation that provides comfort to the five senses of human in line with appropriate anthropometric measurements or an environment equipped with appropriate facilities for activities being carried out
2	Sociality	The ability to have social interaction in a setting
3	Visibility	The ability of individuals to see an object which they are coming to without being visually obstructed
4	Accessibility	The ease of moving through and using the environment
5	Adaptability	The environment's ability to accommodate a new and different behavior
6	Sensory stimuli	The quality and intensity of a stimulus as an experience felt by the senses of human
7	Control	The condition of an environment that enables someone to create a territory and limit a space
8	Activities	A felt intensity in behavior that occurs continuously in an environment
9	Density	A felt density in an environment

10	Privacy	The ability to monitor the flow of information that is seen and heard from or in an environment
11	Meaning	The ability of an environment to present individual or cultural meanings to human
12	Legibility	People's ease of identifying and understanding key elements as well as relationships in an environment, which causes them to find a way or direction

In the context of the study, the effectiveness of the pandemic mitigation in city parks can be evaluated based on the S-O-R theory and spatial attributes from Weisman. Spatial attributes are environmental qualities that can be felt as human experience. The fulfillment of space quality can provide a good experience and make people behave in a particular manner (Weisman, 1981; Yu et al., 2021). The quality of the relationship between behavior of people exercising in city parks and spatial setting of the fitness area with pandemic mitigation can be analyzed from attributes of space. The stimulus from spatial attributes of the fitness space with pandemic mitigation can be accepted and change people's attitudes toward complying with COVID-19 health protocols.

3. Research Method

3.1 Study Approach

This is a quantitative study with a mix-method inquiry, which was used to identify the people's behavioral response in the fitness spaces with pandemic mitigation. Meanwhile, a qualitative inquiry with a case study as a strategy was carried out to reveal the connection between spatial attributes and human attitudes toward complying with health protocols. A case study is a strategy that investigates a particular case in a real-life setting to assess the environmental interaction among specific social units (Denzin and Lincoln, 2008; Yin, 2003). Furthermore, the most challenging aspect of its implementation into a study lies in developing the investigation from an explanation of *what happens* into a coherent discussion of an argument (Groat, 2002; Yin, 2014). The current case study implemented a process of inquiry on a particular case and its products (Stake, 2005). The decision to employ a single approach for collecting data explained spatial attributes in terms of COVID-19 situation. The use of the 'how questions' can provide problem definitions to be described and explored. Consequently, the case study method is considered an effective way to obtain more findings.

The accidental sampling method was used to select the respondents who were in the study locus (Delice, 2010; Luborsky and Rubinstein, 1995). This technique was chosen because some people were not willing to be interviewed, especially after exercising. Furthermore, due to the pandemic situation, the number of people in parks was lower compared to normal conditions.

3.2 Study Themes

The themes, which became the scope of this study were determined based on the aim and literature review, as shown in Table 2.

Table 2. Themes and sub-themes within the study method and field survey

No	Themes	Sub-themes	Study inquiries	Fieldwork activities
1	Physical setting of the fitness area with pandemic mitigation	The Policy of COVID-19 Health Protocols (3M-Washing hands, Wearing a masker, Weeping physical distancing)	Qualitative method with a single case study strategy	Non-participant observation, physical mapping, photographic records
2	The system of environmental behavior (S-O-R Theory)	Individual and communal behavior in compliance with COVID-19 Health Protocols when doing the fitness	Quantitative method	Questionnaire, interviews
3	Spatial attributes and phenomena in the fitness area with pandemic mitigation	Comfort, sociality, visibility, accessibility, adaptability, sensory stimuli, control, activities, density, privacy, meaning, legibility	A qualitative method with a single case study strategy	Non-participant observation, behavioral mapping, interviews, physical mapping, photographic records

Source: Formulated from the theoretical framework, 2021.

This study explored the structural mitigation of COVID-19 pandemic to minimize the impact of the disease by constructing various physical infrastructures based on the standard for preventing its spread (Lai, et al., 2020). For the fitness activities in city parks, there were some architectural-related standard health protocols:

1. Mapping the facilities in city parks for the mitigation of COVID-19, namely spots for handwashing, toilets, as well as health and monitoring posts;
2. Mapping the spaces by managing the facilities and infrastructure to prevent clustering of visitors and ensure the maintenance of 1 and 2 meters distance during general and sport activities, respectively;
3. Putting up barriers for tools that are adjacent or whose distances were less than 1.5 meters;
4. Putting markers or signs on the floor to facilitate the visitors to maintain a distance with the following rules: (a) in general, keep a distance of at least

1 meter from others; (b) during sports activities without shift in position or in a parallel position, keep a distance of at least 2 meters from others; (c) during walking, keep a distance of ±5 meters from others;

5. Providing information media on health protocols. For example, an obligation to wear a masker, keep a minimum distance, wash hands using soap or hand sanitizer, and monitoring of health conditions in city parks area. There was also an entry ban for people with fever symptoms, cough, runny nose, sore throat, and/or shortness of breath.

This study referred to some of the clauses above to investigate influence of spatial setting on people's compliance with COVID-19 health protocols. These provisions were also related to city parks' spatial setting and relevant to this study.

3.3 Study Stages

The preparation stage started with a preliminary observation to obtain an overall picture of the study locus. The initial data were used to develop the framework, determine the themes, and prepare a list of interview questions.

Data were then collected by applying the non-participant observation technique, where the authors carried out an indirect observation by involving themselves (Denzin and Lincoln, 2008) in the respondents' fitness activities. Furthermore, the information obtained was in the form of spatial attributes of city parks and human behavior in implementing COVID-19 health protocols. The observation of human behavior was carried out using the tool of behavioral mapping to map, as well as identify the types and frequency of attitudes. The tool was also used to determine the relationship between attitudes and spatial attributes (Klein et al., 2018). This study used the place-centered mapping technique to determine the mechanism through which an individual or a group of individuals utilized or accommodated their behavior in a particular situation or place (Klein et al., 2018).

The interviews were carried out using the face-to-face method, where the respondents were interviewed directly. This process was performed to collect data that were unobservable, such as the participants' opinions, as well as the factors affecting them personally. A total of 57 respondents were selected using the accidental sampling technique because some people were not willing to be interviewed, especially after the exercise. Furthermore, the number of people varied daily and was often low when the weather condition was favorable.

The observation was often carried out during sports activities and divided into two sessions, namely morning (07:00-09:00) and afternoon (16:00-18:00). The observation days were also divided into weekdays (Monday-Friday) and

weekends (Saturday-Sunday). Furthermore, respondents were grouped based on age for easy identification of human behavior. Due to weather conditions and the Regulations for the Enforcement of Community Activities Restrictions (PPKM), data collection was carried out from September-November 2021.

4. Results and Discussion

4.1 Setting of the Fitness Space for COVID-19 Mitigation

The fitness space in the city parks of Puputan Badung was equipped with the necessary equipment, seating areas for rest, and open stages. Furthermore, the space elements consisted of the floor area and the wall plane. The floor area containing the seating and the fitness facilities was covered with rough texture ceramic tiles and concrete layers, respectively, while the surrounding region had grass overlays. The base plane of the open stage was made of brush stone, and park curbs were used for the wall plane. The floor levels were different, and they served as space barriers.

Photo 1. The fitness space was equipped with facilities to mitigate COVID-19 pandemic (Photo: I Gede Wardana Putra)

Spatial setting to mitigate COVID-19 pandemic in the fitness space were in the form of the provision of handwashing facilities, the medium of information on COVID-19 prevention, and minimum distance markers for benches in the seating area. There were two units of handwashing facilities near the entry access to the fitness space. One medium of information on the prevention of COVID-19 spread was placed behind the washbasin with a size of 120 cm x 60 cm. The minimum distance markers were put on the benches, as shown in Photo 1.

4.2 Human Behavior Response to the Implementation of COVID-19 Health Protocols

Based on the questionnaires and interviews, several essential data were disclosed. The interview data showed that the level of compliance to the 3M health protocols varied during exercising. The results showed that the participants mostly adhered to physical spacing (63.2%), followed by washing hands (45.6%). Furthermore, only 8.7% of the participants compliance with protocols for wearing a mask. Based on the interviews, the masks worn during exercise caused breathing difficulties during exercise, hence, they are often taken off or lowered to the chin level.

The total percentage of the implementation of COVID-19 health protocols is presented in Figure 1. Approximately 3% of the respondent's compliance with the guidelines, 77% adhered to some of them, and the remaining did not compliance. Figure 2 showed that the implementation of health protocols in the fitness space was not optimal. This indicated that COVID-19 mitigation efforts in the area were suboptimal due to several constraints in Figure 1.

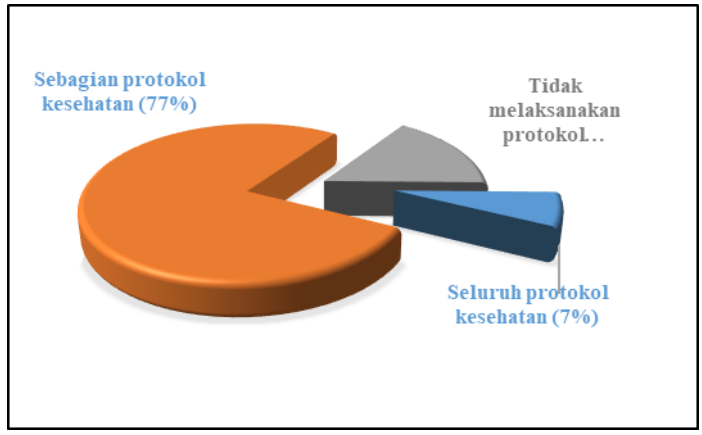

Figure 1. Implementation of the overall COVID-19 health protocols

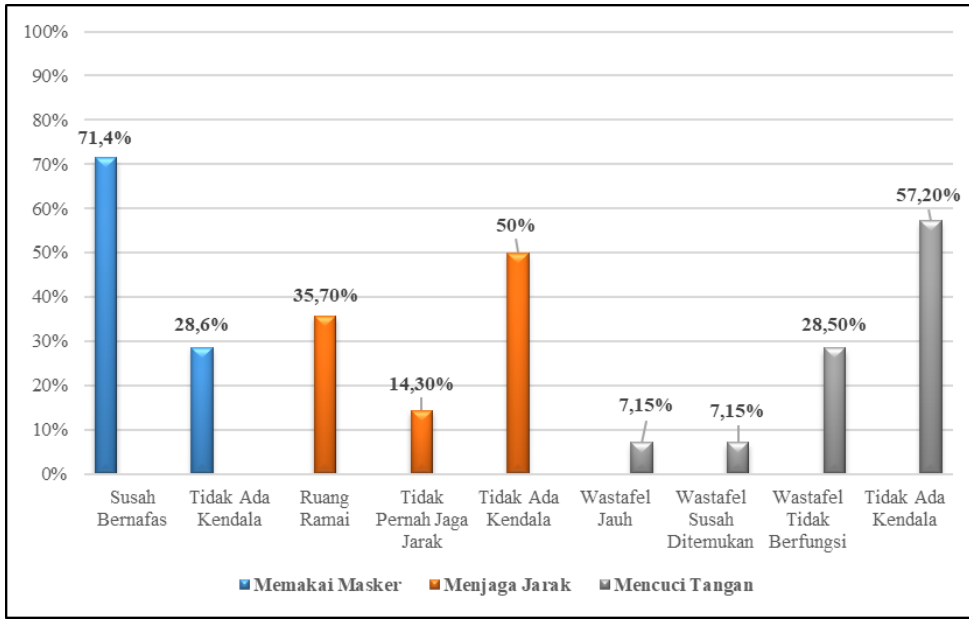

Figure 2. Obstacles to the overall implementation of COVID-19 health protocols.

Based on Figure 2, the implementation of COVID-19 health protocols faced obstacles, including issues with spatial setting. For example, the washbasin was located far away in a hidden area, and it did not function properly. There were also no markers to help maintain distance in the fitness equipment region. This made people tend to ignore minimal physical distancing, particularly during peak hours. It was evident that the current spatial setting have not been entirely successful in changing human behavior to compliance with health protocols. However, the respondents stated that city parks were still needed for exercise during the pandemic, even though they had to adjust to the new habits.

4.3 Influence of Spatial Attributes for COVID-19 Mitigation on Human Behavior

Attributes of spatial were essential elements that must be present in a space to create an appropriate spatial setting for its users. Furthermore, these attributes enable individuals to perform activities optimally and behave in a manner that is suitable to the characteristics of the area. To mitigate COVID-19 pandemic, the fitness space of city Parks of *Puputan Badung* has been designed with the following features:

The attribute of comfort provides individuals with a sense of ease and convenience while performing activities. Since this attribute was related to people's subjective opinions, it cannot be directly observed. Therefore, to assess

the level of comfort, interviews were held with the users. The results showed that all respondents were comfortable while exercising in the fitness space equipped with appropriate spatial settings to mitigate the risks of COVID-19.

The attribute of sociality enables individuals to engage in social interaction while maintaining physical distance based on health protocols, as shown in Photo 2. In the fitness space, the seats were equipped with minimum distance markers to facilitate social interaction. However, the floor area and some sports facilities do not have these markers.

Photo 2. Attributes of sociality (Photo: I Gede Wardana Putra)

Attributes of visibility is a spatial setting that enables people to see and come to any part of the space without being visually obstructed, as shown in Photo 3. The results of the observation showed that this attribute has been fulfilled.

Photo 3. Attributes of visibility (Photo: I Gede Wardana Putra)

Attributes of adaptability accommodates human behavior in implementing health protocols, as shown in Photo 4. Furthermore, observation showed that the fitness space can accommodate the implementation of the established guidelines, such as washing hands, wearing a mask, and maintaining a physical distance.

The attribute of sensory stimuli was a spatial setting that can be perceived by the senses of humans (can be seen and touched or used easily). The facilities

to mitigate COVID-19 pandemic provided by city parks, such as COVID-19 information media, the minimum distance markers, and the wash basin for washing hands, can be seen and identified easily by the people. The fitness equipment and the facility for washing hands can also be used easily.

Photo 4. Attributes of adaptability (Photo: I Gede Wardana Putra)

Attributes of accessibility facilitated people to access the facilities in the fitness space, as shown in Photo 5. The observation data showed that the floor areas of the main access to the space and washbasin were covered with soil, and this made them slippery, especially during the rainy season. On the main access path, there was a seat, which obstructed accessibility.

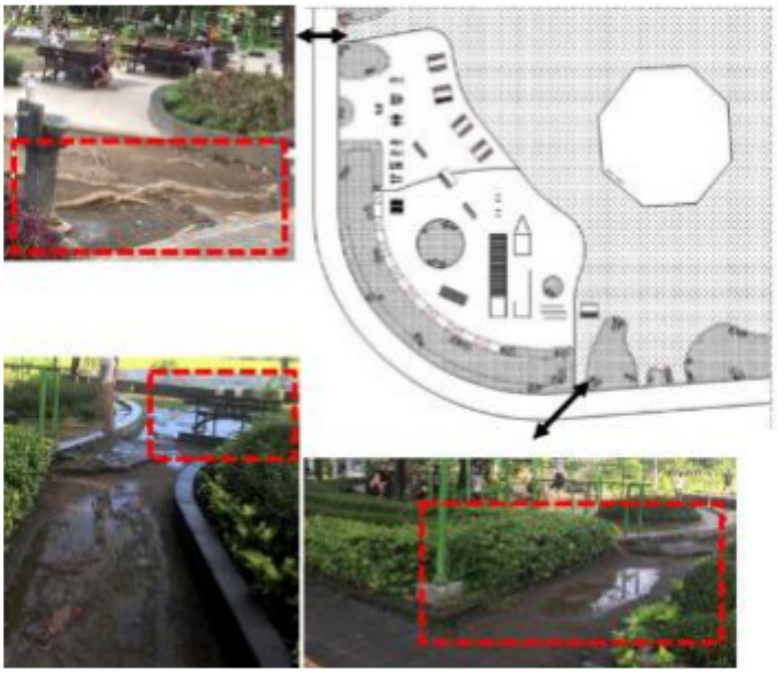

Photo 5. Attributes of accessibility (Photo: I Gede Wardana Putra)

Attributes of control is a spatial setting that enabled a personality to create a territory and limit space. However, the fitness space lacked control measures to ensure that visitors keep a safe distance. This was due to the absence of minimum distance markers on the floor, as shown in Photo 6.

Photo 6. Attributes of control (Photo: I Gede Wardana Putra)

Attributes of activities is a spatial setting that continuously accommodates engagements in line with health protocols. The results of the one-week observation showed that the fitness space accommodated human behavior in implementing established guidelines, such as wearing a mask, keeping a distance, and washing hands. However, this was not optimal because the facilities for health protocols were still inadequate.

Attributes of density is a spatial setting that can prevent a high density in an area. The observation revealed that the fitness space cannot avoid a high density because there were still some gatherings. Furthermore, people cannot keep a distance, especially during peak hours, as shown in Photo 7. The floor of the fitness space was also not equipped with minimum distance markers and there was no indicator showing the congestion level.

Photo 7. Attributes of density (Photo: I Gede Wardana Putra)

Attributes of privacy is a spatial setting that enables an individual to keep their privacy. However, the fitness space lacked these attributes, especially in peak hours due to the absence of minimum distance markers on the floor.

Attributes of meaning indicated that spatial settings of the fitness space have completely fulfilled COVID-19 health protocols. The quality of meaning cannot be observed because it was related to the personal opinions of the visitors. Therefore, interviews were needed, and 64% of the respondents gave a negative response.

Photo 8. Attributes of legibility (Photo: I Gede Wardana Putra)

Attributes of legibility is a spatial setting that facilitates the visitors to understand the mitigation implemented in the space. Spatial settings and facilities for COVID-19 mitigation were difficult to understand and locate. This was because there was only one medium of information, and the minimum distance markers have started fading. The facilities for washing hands were also relatively far from the fitness space, as shown in Photo 8.

Based on the field data, spatial setting in the fitness space has been equipped with COVID-19 mitigation measures, but its standards have not been practical, indicating an incomplete implementation.

4.5 Discussion

Several studies have explored the cause of the low compliance to health protocols during the fitness sports at city Parks of Puputan Badung. The results

of this study showed that the fitness space in parks has been equipped with spatial settings, but these efforts have been ineffective. Based on COVID-19 prevention standard from the Ministry of Health Republic of Indonesia Number HK.01.07/MENKES/382/2020 for People in Public Facilities, there were still some aspects of mitigation that have not been fulfilled in the fitness space. This finding is in line with the field data obtained in this study, where the efforts were incomplete. The fitness space in city parks has not been able to optimally accommodate the community's health protocols behavior or increase compliance with health protocols.

The analysis showed that some spatial attributes have not been fulfilled, including sociality, accessibility, control, activities, density, privacy, meaning, and legibility. Meanwhile, attributes of comfort, visibility, adaptability, and sensory stimuli have been fulfilled. Setting of the fitness space in the city parks of Puputan Badung for COVID-19 mitigation directly influenced compliance with health protocols. In areas with more complete mitigation measures, people often adhered to the established guidelines.

Based on physical observations and interview data, one of the factors affecting the participants' compliance was the suboptimal setting of the fitness space with COVID-19 mitigation. The interviewers stated that another major constraint was crowded room conditions. The locations of the washbasins were far away, and difficult to assess, and the instrument was malfunctioning. The current condition of the fitness space, which was equipped with COVID-19 mitigation, also directly influenced compliance with health protocols. The types, location, dimensions, completeness, as well as the number and quality of facilities, were also influential factors.

A spatial setting that provided completed COVID-19 mitigation measures and considered spatial attributes can motivate people to be disciplined in implementing health protocols. However, some of the facilities were not yet effective in real life, indicating that adjustments are needed, particularly improvements to the space. The unavailability of some facilities also caused the inability of the area to accommodate the people's health protocol optimally. Improvement of mitigation efforts and spatial setting with the people in the field can provide optimal health protocols behavior.

Based on the current condition of spatial attributes of the fitness space, it cannot provide people with a good experience or satisfaction during compliance with the established guidelines. Furthermore, Yu et al., 2021 stated that people can change their behavior through external factors, namely stimuli outside a physical environment. These findings are consistent with other studies that behavior was related to human interaction with their physical environment to influence one another (Ayoko and Ashkanasy, 2019).

The S-O-R theory suggested that the provision of facilities and an enabling environment can convince someone to change their behavior, and vice versa. Changing human behavioral patterns were successful when accompanied by facilities and the physical environment. Furthermore, the field data and the relevant theories showed that the environmental setting of the space influenced behavior. The fitness space has not provided optimal support for facilities and environments that can change people's attitudes toward complying with health protocols, leading to poor implementation.

5. Conclusion

The fitness space of the city parks of Puputan Badung Denpasar Bali, which was equipped with COVID-19 mitigation measures has not provided optimal stimuli to the people. It has also not been able to change human behavior toward complying with health protocols. Consequently, many people have not yet implemented COVID-19 preventive measures during fitness activities. Since some of the spatial qualities have not yet been fulfilled, the people's awareness of the importance was useful in investigating the connection between human behavior and spatial setting.

This current study has several limitations, one of which is the investigation of only the city parks of Puputan Badung, particularly its fitness space. Therefore, the results were not relevant to other parks in Denpasar with different characteristics. The second limitation is the limited number of respondents, sports activities, and spatial setting. This indicates some sports activities and spatial setting were not included in the study locus. Further studies can be carried out to obtain more representative data.

An evaluation of spatial setting is crucial in optimizing efforts to mitigate COVID-19 pandemic in city parks. Further studies aimed at identifying the appropriate condition for people during the fitness activities can be a strong stimulus to optimize compliance with the established guidelines. Therefore, individuals can adapt their attitudes and behavior to meet the demands of the New Normal Era and prevent the spread of COVID-19.

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