Emotional factors on residential well-being in densely populated cities

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ABSTRACT

In densely populated cities, rapid urbanization has accelerated the development of the built environment, which may change residents' lifestyles and have a great impact on their mental health. As pointed out by many researchers, the built environment is designed to make residents get more happiness, not just physically but also psychologically. Taking a case study in China, field visits were conducted to four small-scale communities in Shenzhen. By observing and conducting interviews with 47 respondents, the study aims to explore the practical problems and influential factors in the living environment and to understand perceptions of residents based on residential well-being. The study also investigates the relationship between the overall residential well-being and the positive affect, to further understand the effects of different emotional aspects on residential well-being, which is expected to provide a new direction for the future community design.

INTRODUCTION

Promoting public health is a new point for the global world. Using the growth of technology and estate, the built environment inside the urban area has already been improved, but the public health outcomes may well not come to be better. In the lengthy practice of exploration, a considerable level of research concerning public health has become developed within different academic fields. For example, many researchers have concentrated on exploring impact factors involving individual's satisfaction levels with different areas of their lives, such as job, community, and shopping experience (Diaz & Rhodes, 2018; Park et al., 2018; Yi & Nataraajan,

2018). Furthermore, some scholars are likely to discover out the relationship between physical space and residents' physical and psychological states to optimize space and promote public health. At the moment, many studies directly or even indirectly proved the effect of the built environment on people's physical wellness, so some scholars began to focus on improving public health by changing the physical spaces to encourage people's physical activities (Zhou et al., 2017; Hino et al., 2011; Troped et al., 2010). While according to the data as of 2015, the total number of people living with anxiety disorders in the world was 264 million which resembled a 14.9% rise since 2005, while the number of people living with depression increased by 18.4% between 2005 and 2015, as a result of population growth and ageing (World Health Organization, 2017). The growing proportion of mental problems causes poorer public health outcomes, so global scholars began to focus on how to improve public mental health from different research fields. Some small-scale studies were conducted to study the associations between the built environment and mental problems (Araya et al., 2007; Weich, 2002). It is difficult to measure and collect data associated with mental health, because people's mental state is very complicated, and people generally judge their mental health by describing and coding events and feelings. Sometimes, researchers also identify some factors indirectly affecting mental health by studying whether they influence other elements that are closely relevant to mental health. For example, if the physical activity has been proven to affect the physical health, and physical health is shown to be closely linked to mental health, then we can assume that the physical activity also indirectly affects the mental health. At this point, it was proved that neighbourhood aesthetic quality and objective measures of greenspace in living environments have positive associations with higher mental well-being (Bond et al., 2013; van den Berg et al., 2015). Similarly, Gong (2016) proposed that neighbourhood quality, the quantity of green space and land-use mix are related to psychological distress. Although in the process of exploration, researchers found that some factors in the built environment may affect people's cognitive or psychological aspects, few studies focus on how to change the built environment and spaces to improve mental health. Therefore, this study tends to focus on the psychological aspects of residential well-being and to explore the correlation between them.

Affect is a more general concept than emotion, referring to consciously accessible feelings, and includes attitudes, moods, and physical sensations. Also, it is often divided into two dimensions, either positive or negative affect in most researches. Positive affect is defined as the feelings that reflect a level of pleasurable engagement with the environment (Clark et al., 1989) such as happiness, joy, excitement, and contentment. In addition, some evidences support positive affect can facilitate approach behaviour (Cacioppo et al., 1999). From this perspective, experiences of positive affect could promote the individual's engagement with the built environment which significantly refers to environmental well-being. Also, some evidence suggests that people can improve their emotional well-being by cultivating experiences of positive emotions (Fredrickson, 2000). While emotion researchers might argue that an individual's emotions, both positive ones and negative ones, evolved to help people assess their emotional status, and are therefore all equally desirable in appropriate circumstances, well-being researchers assume that positive

emotions are desirable and negative emotions are undesirable (Diener,2009). Moreover, a preliminary study was conducted in Harbin to explore a set of environmental factors related to residential well-being in the living environment in China (Wei et.al., 2020). In this context, this study only considered positive affect or emotions as one of the components of the impact factors of residential well-being rather than negative affect or emotions. Above all, we summarized five emotional factors that can reflect the positive affect from the previous studies, and this study aims to explore the relationship between five emotional factors and residential well-being in the urban communities by conducting a case study in Shenzhen.

DATA COLLECTION

Based on the previous studies and the happiness measurements from the World Database of Happiness and World Happiness Report in 2018, five emotional factors that could reflect positive affect were summarised. Therefore, we planned to interview people who lived in the same community, because we want to know how people rank the influence of these five emotional factors when they evaluate their residential well-being. Also, we collected the self-assessment levels of their whole residential well-being and the emotional factors to analyse the correlation between them.

Figure 1. Location of selected community. (modified from Amap)

To apply the theory in practice and to collect convincing data, we conducted a case study and selected a typical residential community with several small-scale communities, which is in the Baoan district of Shenzhen. Regarding the target, Shenzhen is chosen as one of the cities with rapid development and perfect infrastructure in decades. Furthermore, the selected community should be a closed community with relatively systematic property management to clearly distinguish the internal and external areas of the community. Since we considered that the housing price can make sense on the residents' economic conditions to some extent, we selected small-scale communities in the same community to avoid the influence of uncontrollable factors such as community culture, economic conditions, and geographical location. Based on these considerations, we selected four small-scale communities in the Haiwang Community which was built in 2014 with 11 high-rise commercial and residential communities which were built successively. Therefore, the researcher interviewed 47 residents who lived in four small-scale communities of this community and collected their emotional levels and residential well-being on the evening of working days.

FINDINGS AND DISCUSSION

We observed the built environment of the four small-scale communities in the Haiwang Community and found some problems which may impact the results of residential well-being. In the four small-scale communities, we found some negative phenomena that may affect residents' living perceptions. According to the result of interviewing residents' attitudes on the community environment, more than 50% of respondents referred to the public facilities in the open spaces and garbage recycling were the problems that troubled them most and influenced their feelings. Figure 2a-b

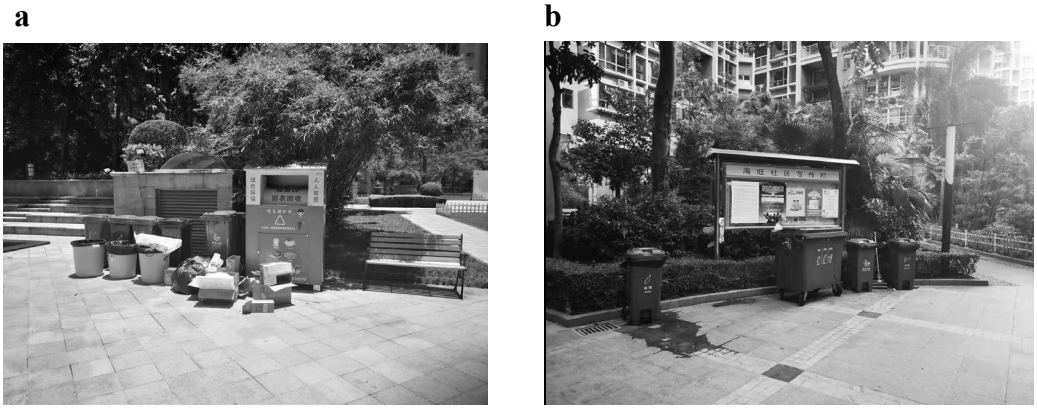

Figure 2a-b. Sanitation of the recycling areas inside the community. (photographs by authors)

show the recycling areas inside the selected small-scale communities were not in good sanitation accompanied by some odour, while some garbage bins were in a mess, and there was some unknown sewage on the ground. Messy garbage bins can affect residents' visual sense of beauty, while smelly sewage can stimulate residents' sense of smell and even breed bacteria on hot summer days. Furthermore, figure 3a-d

show the utilization of open spaces in the selected communities. During summer days, the unshaded spaces were almost unused due to the abundant sunlight. However, we found some interesting spaces which were almost empty only set a chair, and one small place as figure 3d shows was built with a basketball rack, where was too small to hold a basketball game. Regarding the bicycle parking space as figure 3b shows, there is only a bicycle parking sign, but no specific parking space, resulting in confusion, which may lead to some contradictions and affect residents' living mood. Also, figure 3c shows an open space in the community with only one chair, forming a lonely space atmosphere, unable to gather group activities. All these phenomena reflect the defects of the space design of the community, and directly or indirectly affect the residential well-being.

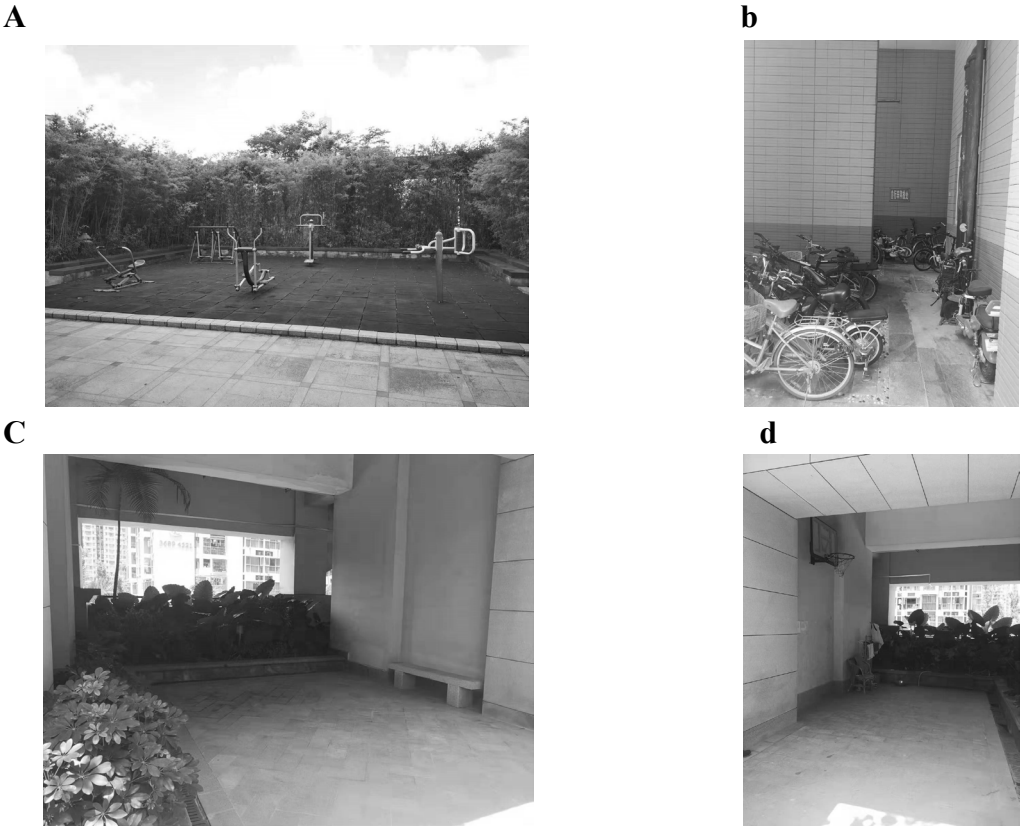

Figure 3a-d. Utilization of open spaces in the selected communities. (photographs by authors)

In addition, we summarised and analysed the answers regarding the factors that affected their residential well-being from 47 respondents, the result is showed in Table 1 which reflected different aspects of factors influencing residential well-being for residents. We summarised the respondents' answers into six aspects, including property management, greenspace inside the community, open spaces design inside

the community, the public environment around the community, neighbourhood, and housing quality. As Table 1 shows, the management issues regarding elevators, air conditions, and community activities are classified as property management. And the sidewalks and some public facilities such as fitness equipment in the Haiwang Community are summarised as the public environments around the community, while the facilities and utilization of open spaces in the communities are in the design of the open spaces inside the community. Moreover, some behaviours that affect the relationship between neighbours are classified as neighbourhoods.

Table 1.Results of Interviewing 47 Respondents.

Different aspects	Opinions	Number of mentions
Property management	"the elevators and monitoring equipment are always broken"	9(19.14%)
	"the sanitation of the community needs to be improved"	14(29.79%)
	"the entrance and exit of the community are not strictly guarded"	8(17.02%)
	"projectile problems need to be solved"	5(10.64%)
	"community activities are needed for elderly and children"	2(4.26%)
Greenspace inside the community	"greenspace is too little"	3(6.38%)
	"there is always dog poop on the lawn"	1(2.13%)
Open spaces design inside the community	"parking space allocation is not reasonable"	4(8.54%)
	"public facilities are not enough"	5(10.64%)
The public environment around the community	"nearby stores occupy sidewalks around the community"	6(12.77%)
	"the fitness equipment is of poor quality"	7(14.89%)
Neighbourhood	"children damage public property"	3(6.38%)
	"residents walk their dogs without ropes"	2(4.26%)
	"neighbours make a lot of noise at night"	4(8.54%)
	"neighbours do not know each other"	2(4.26%)
Housing quality	"the outer walls of buildings need repairing"	3(6.38%)
	"walls are not soundproof"	2(4.26%)
	"exterior wall leakage"	2(4.26%)
	"the window design of the house is bad"	1(2.13%)

Also, we counted the numbers and percentages of people who mentioned

different opinions, which partly reflects the importance of environmental factors affecting residential well-being. 80.85% of respondents mentioned that property management impacted most on their residential well-being, while only 8.51% of residents thought the quality of green space inside the community can influence their residential well-being. Because of the small number of target groups in this study, we consider that all the factors mentioned by respondents are potential impact factors of residential well-being. At this point, we will conduct the questionnaires by collecting the satisfaction levels of the five environmental factors to explore their associations with residential well-being.

Table 2.Correlation between Emotions and Residential Well-Being.

		convenience	comfort	security	belonging	pleasure
RWB	Pearson Correlation	.422**	.542**	.625**	.612**	.713**
	Sig. (2.tailed)	0.003	0.000	0.000	0.000	0.000

**. Correlation is significant at the 0.01 level (2-tailed).

Furthermore, we analysed the emotion levels of respondents to explore the correlation between positive affect and residential well-being, and the result is shown in Table 2. The result shows that five emotions are significantly correlated with residential well-being, and the sense of pleasure has the strongest correlation in five emotions. Convenience has the lowest correlation but also reaches 0.422.

CONCLUSIONS

In this study, the living environment of four small-scale communities in the Haiwang Community of Shenzhen was investigated on the spot, and some problems that may affect residents' happiness of living were found. For example, the garbage recycling areas were disorganized and has poor sanitation. The unreasonable design of public space in some small areas made it unusable for residents, which was also mentioned by residents. Also, the correlations between five emotions and residential well-being were analysed, and the results showed that they were all significantly correlated with residential well-being. Among them, the sense of pleasure showed the strongest correlation.

In the future study, the associations between environmental and emotional factors will be explored, and their relationships with residential well-being will be studied. In addition, the study needs more respondents to ensure the validity of the results, so future studies need to be conducted in different communities in different cities. Based on this, we can propose some effective residential design strategies to improve residential well-being, and the results of the study will provide a mental health orientation for the urban community design.

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