Social Housing and Psychological Issues Discussed in Literature: A Thematic Review

Wan Aishah[1], Mohd Zairul[1,2], Marek Kozlowski[1], Shureen Faris Abdul Shukor[3]

Department of Architecture[1], Faculty of Design & Architecture Institute of Social Sciences[2], Department of Landscape Architecture[3], Faculty of Design & Architecture, Universiti Putra Malaysia, Serdang, Selangor, Malaysia

Abstract
Social housing is a housing program by the government or municipal council of a city to provide shelter to the lower income and vulnerable groups of people. It is also called public housing, which refers to apartment buildings owned and operated by the city government and rented to individuals of low to medium income below-market rate. Previous studies discussed residents' satisfaction levels and related social housing characteristics and living conditions with psychological issues such as stress and depression. However, there are many psychological issues addressed in the literature. It is essential to see the psychological issues related to social housing being discussed recently in the literature. Therefore, this paper aims to study the discussions in social housing publications regarding psychological issues from the year 2018-2022. This paper uses the thematic review method, with systematic inclusion and exclusion protocol and theme formation, using ATLAS.ti 8 software. Four themes were discovered in this review paper: psychological characteristics, building community, spatial needs, and support experienced. From the four discovered themes, psychological characteristics have been discussed the most in the literature compared to the other three. This paper contributes to expanding knowledge of social housing and its psychological issues. The knowledge is helpful for architects, public health practitioners, policymakers, researchers, and industry players in the field of housing development. Future studies relating to the spatial needs of social housing residents can be explored to shorten the user needs gap in social housing projects.
Keywords: Architecture, Built Environment, Social Housing, Psychology

Introduction
Social housing is a housing program by the government or municipal council of a city to provide shelter to the lower income and vulnerable groups of people. It is sometimes called public housing, which refers to apartment buildings owned and operated by the city government and rented to individuals of low to medium income below-market (Cole et al., 2020). In the United Kingdom (UK), social housing, sometimes called council housing,

comprises rental homes from either a not-for-profit housing association or the local government council. The rents are attached to local incomes providing affordable and secure housing for lower-income households (Nasim, 2022). Low-income families earn an average monthly household income that does not exceed $1500, which is the eligibility criterion for most government assistance schemes for the needy in Singapore (Suen & Thang, 2018). Social housing is also often associated with public housing initiatives by the government and local authorities in many countries and low-cost housing. Low-cost housing is a cheaper shelter solution for a particular economic group. The term low-cost refers to the price of materials for housing development and the housing units as the product.

Psychology studies the human mind and behavior, while psychological health in housing is always related to human satisfaction. Previous studies discussed the satisfaction level of social housing residents and related social housing characteristics and living conditions with psychological issues such as stress and depression (Cho, 2020; Cole et al., 2020; Gonyea et al., 2018; Osypuk et al., 2019). However, there is still a lack of exploration of the perceptions of social housing (Ziersch et al., 2018) and how severe the social housing characteristics and living conditions impact residents' psychological health (Cho, 2020; Cole et al., 2020; Gonyea et al., 2018). Nevertheless, much social housing and psychological issues are discussed in the literature (Adame et al., 2020; Agarwal et al., 2021; Cole et al., 2020; Marais & Lenka, 2021; Pain, 2019). Some examples are stress, loneliness, depression, discrimination, family roles, gatherings and events, personal space, sense of place, and satisfaction. It is essential to see the psychological issues related to social housing, which have been discussed most recently in the literature.

Therefore, the underpinning of this paper is to study the issues that have been discussed in the social housing publications regarding psychological health from the year 2018-2022 through the following research question

What is the current discussion trend on social housing related to psychological issues found in the literature from 2018- 2022?

Materials and Methods

The thematic review using ATLAS.ti 8 as the tool to conduct qualitative analysis was introduced by (Zairul, 2020). This method was implemented in this paper because this study applies the qualitative approach of the thematic analysis procedure in a literature review. Clarke & Braun (2013) defined thematic analysis as identifying the pattern and constructing themes over thorough reading on the subject. The following step was taken to determine the pattern and create the category to understand the trend of social housing and psychological issues related to it in worldwide publications. The principles are to analyze and interpret the discussions to recommend future architecture and social housing research. The selection of literature was performed according to several selection criteria: (1) publication from 2018-2022, (2) have both keywords of social housing and psychology (3) Focus on social housing and psychological issues.

Table 1
Search strings from SCOPUS, Science direct, Emerald insight, and EBSCOhost

SCOPUS	(TITLE-ABS-KEY (social_housing) AND TITLE-ABS-KEY (psychology)) AND (LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018))	41 results
Science direct	"social housing" AND PSYCHOLOGY Refine by: Years 2022 2021 2020 2019 2018	26 results
Emerald insight	"social housing" AND PSYCHOLOGY Sorted by relevance **Access** **Only content I have access to** **Year** **From 2018 until 2022** **Content type** **Article**	122 results
EBSCOhost	"social housing" AND "psychology" **Expanders** • Apply equivalent subjects **Limiters** • Full Text • Published Date: 20180101-20221231 • Publication Type: Academic Journal • Language: English • PDF Full Text	108 results
	Total	**297 results**

The literature search was performed in four search strings, SCOPUS, Science direct, Emerald insight, and EBSCOhost. The initial search yielded 41 articles from SCOPUS and 26 from Science direct. Another two quests were added to get more articles for analysis, resulting in 122 articles from Emerald insight and 108 articles from EBSCOhost. However, 272 articles were removed due to their premature results and anecdotes or were not discussing social housing and psychological issues. Some of the articles were not accessible or overlapped with other downloaded articles. Therefore, the final paper to be reviewed was down to 25 articles, as shown in Table 1. The articles were uploaded in the ATLAS.ti 8 as primary documents, and then each paper was grouped into 1) author, 2) issue number, 3) periodical, 4) publisher, 5) volume, and 6) year of publication. In doing so, the articles can be analyzed according to the year it was published and what is the discussion pattern according to the year. The total

articles finalized into the final documents in the ATLAS.ti 8 is 25 documents. Only accessible article was selected in Emerald insight, and an English paper with PDF full-text format was chosen in the EBSCOhost search.
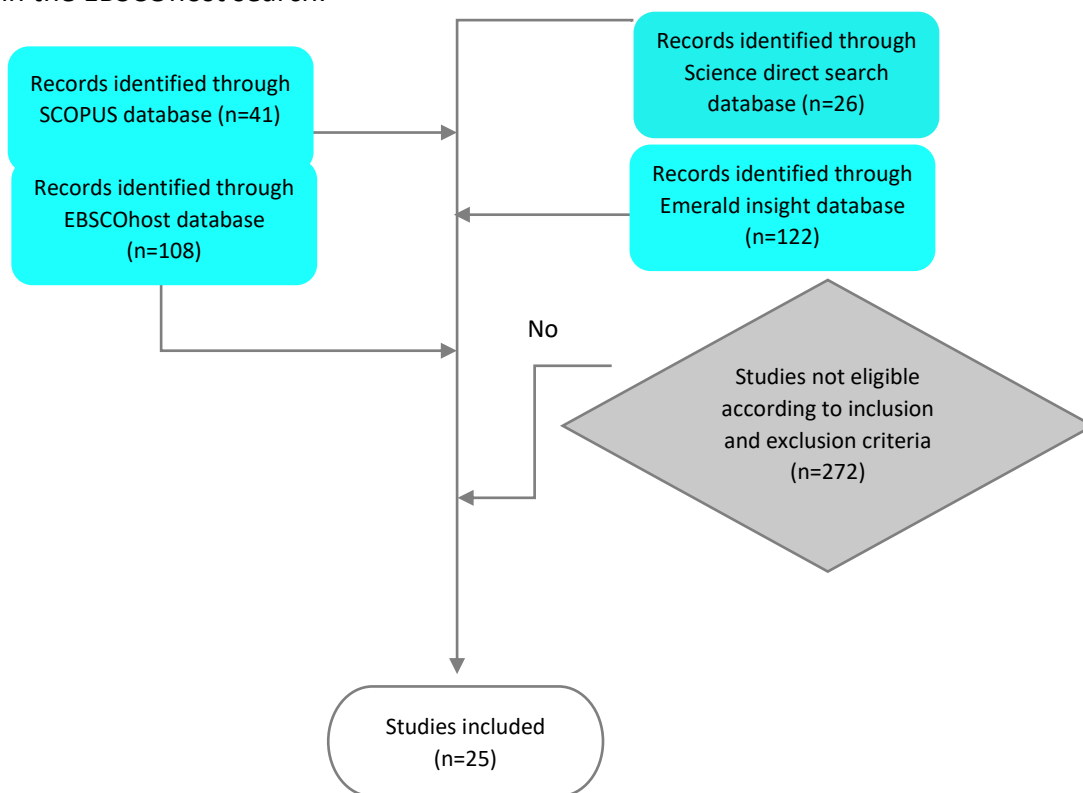

Figure 1: Inclusion and Exclusion criteria in the thematic review

The final selected 25 articles were uploaded to ATLAS.ti 8 software, and further analysis was conducted using the software. These publication papers, which had through the inclusion and exclusion criteria, are papers with the most relevant discussion on social housing and psychological issues. Thus, further analyses are more appropriate and just.

Figure 2: Paper breakdown according to the country of publication

The researchers in 15 countries discussed social housing and psychological issues in literature. The countries spread from Australia, Asia, Europe, and America. Of 25 papers, the United Kingdom, United States of America, and Canada has the most discussions with four publication papers. South Korea was mentioned twice, while the rest of the other countries

were mentioned in one publication paper each. Researchers in the United Kingdom and Canada highly discussed psychological characteristics. On the other hand, researchers in the United States of America examined building community the most.

Results and Discussions

The main conclusions of the thematic review are reported in this section. A word cloud was created using ATLAS.ti 8 software to study the selected 25 articles for this review paper. The term "housing" was used the most in the selected publications and mentioned 1939 times, followed by the word "social," which appeared 1358 times, as shown in Figure 3. Other important and related terms such as "health" were found 1131 times, while the word "mental" was found 296 times, and "psychological" was repeated 128 times in various publications. The word "community" was mentioned 485 times, and the term "space" appeared 229 times, "spaces" 165 times, and "spatial" 97 times in the word cloud. In conclusion, this database emphasizes social housing discussions concerning mental and psychological health. It can also be concluded from the word cloud that community and spatial elements or experiences were among the discussions in the publications.

Figure 3: Word cloud generated from 25 articles

The metadata was analyzed using ATLAS.ti 8 software. The authors of the publications were then analyzed according to the content of discussion in the publications. A cross table of authors and content of conversations in publications, called the theme, was constructed for qualitative data analysis. From the table, the type of issues discussed in the literature can be extracted for further clarification.

Table 2

Type of issues discussed in the literature

Author/Theme	Psychological characteristics	Building community	Spatial needs	Support experienced
(Suen & Thang, 2018)	-	/	/	/
(Adame et al., 2020)	/	/	/	/
(Ziersch et al., 2018)	-	-	-	/
(Bosankić et al., 2019)	-	-	/	-
(Cole et al., 2020)	/	/	-	-
(Osypuk et al., 2019)	/	-	-	-
(Marais & Lenka, 2021)	/	-	/	-
(Gonyea et al., 2018)	/	/	-	-
(Cho, 2020)	/	-	/	-
(Agyefi-Mensah et al., 2020)	-	-	/	-
(Catela, 2020)	/	-	-	-
(Nasim, 2022)	/	-	-	-
(Agarwal & Brydges, 2018)	-	/	-	-
(Liu et al., 2018)	-	-	-	/
(Pain, 2019)	/	-	-	-
(Moriyama et al., 2019)	/	-	-	-
(Agarwal et al., 2021)	/	-	-	-
(Buckingham et al., 2022)	/	-	-	-
(Perreault et al., 2022)	/	-	-	-
(Röhr et al., 2022)	/	-	-	-
(Riva et al., 2019)	/	-	-	-
(Ghafourian & Hesari, 2018)	-	-	/	-
(Ortiz, 2019)	-	/	-	-
(Yau, 2018)	/	-	-	-
(Salama, 2022)	/	-	-	-

After the selected publication papers were reviewed carefully, and the articles' related content was identified and coded, the codes were merged and transformed into four similar themes. The themes are: (1) psychological characteristics, (2) building community, (3) spatial needs, and (4) support experienced. The newly formed themes were then analyzed with corresponding authors to see the pattern of discussion about social housing and psychological issues among research publication authors for the current five years. In conclusion, the most discussed issue in the publication is psychological characteristics. It is then followed by building community and spatial needs. The final issue discussed is the support experienced by the research participants. The paper breakdown according to the themes generated is shown in Table 2.
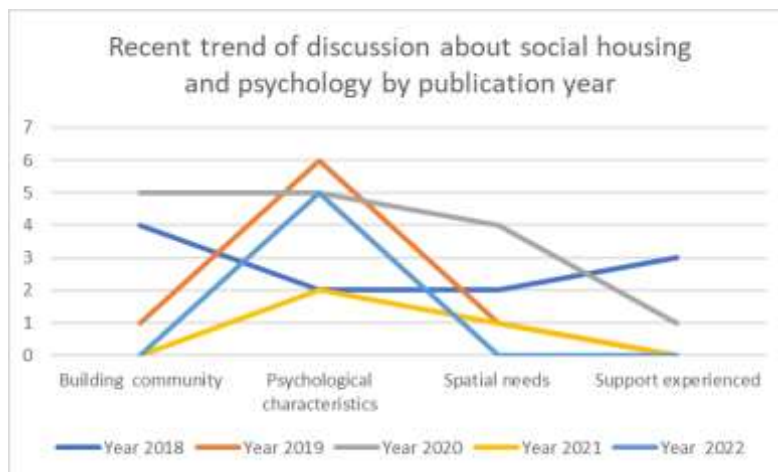
Figure 4: Recent trend of discussions about social housing and psychology by publication year

Figure 4 above shows that psychological characteristics were highly discussed for four years, from 2019 until 2022. Building community and spatial needs were highly addressed in 2020, while support experienced was highly debated in 2018. The authors highly discussed building community in the year 2018 and 2020. However, it was later declined in recent years. The situation might be due to the COVID-19 health pandemic that has hit the entire world these recent three years, where most countries emphasize lockdown or movement control order, and people must stay at home (Ribeiro et al., 2021). Therefore, community-related programs and events cannot be conducted during this pandemic. Thus, not many discussions about building community can be produced.

Support experienced was discussed in 2018 and later declined steadily and has not been discussed anymore recently. This is also due to the COVID-19 pandemic when people could not gather and meet each other to offer psychological support to the ones in need. Psychological characteristics were highly discussed from both positive and negative points of view and are still relevantly discussed even during and after the pandemic, which some countries might refer to as the end of the pandemic or endemic.

What is the current discussion trend on social housing related to psychological issues found in the literature from 2018- 2022?

Figure 5: Themes and codes generated in ATLAS.ti 8

Figure 5 shows the process of doing open coding and generating the final themes using ATLAS.ti 8. In the first round, the initial coding resulted in 92 open codes. The codes were merged into four similar themes: (1) psychological characteristics, (2) building community, (3) spatial needs, and (4) support experienced. An overall theme network was developed using ATLAS.ti 8, as illustrated in Figure 6. The four generated themes suitably answer the research question about social housing and psychological issues discussed in publications from 2018 until 2022.
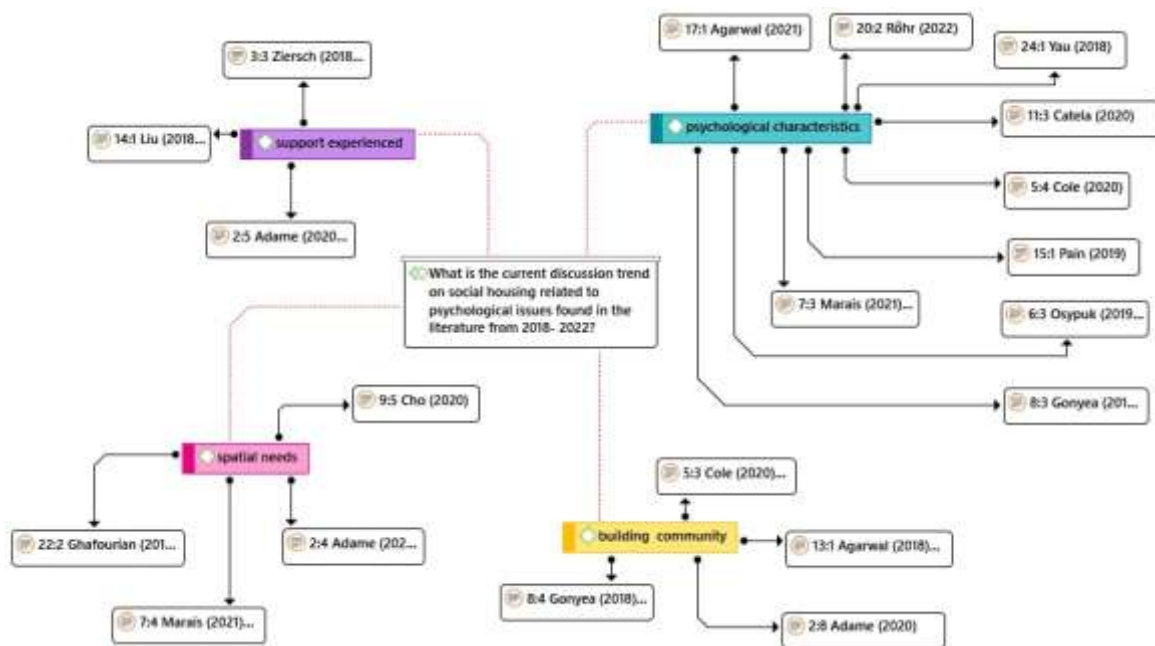

Figure 6: Overall network

Theme 1: Psychological Characteristics

The first theme discusses social housing regarding psychological characteristics, as illustrated in Figure 7. It consists of elements in human psychology, including issues related to the human brain and behavior. Psychological issues include stress, loneliness, depression, discrimination, mental well-being, and satisfaction Cho (2020); Gonyea et al (2018); Marais & Lenka (2021); Osypuk et al (2019) were studied in the social housing projects.

Psychology is a wide range of disciplines. Architects can integrate and apply psychological knowledge into design decision-making. Some psychological disciplines to be considered in architectural decision-making might include humanistic psychology (Bosankić et al., 2019), and community psychology (Cole et al., 2020). Humanist and psychological architecture are among architectural studies disciplines related to the psychological field.

In this thematic review paper, Marais & Lenka (2021) discussed discrimination experienced by residents in social housing projects. The discussion by Marais & Lenka (2021) supports Osypuk et al (2019), who also studied discrimination in social housing. Osypuk et al (2019) expand the studies to relate social housing discrimination with mental health. The result shows the relationship between social housing discrimination, psychological distress, and major depressive disorder. This result was justified by the study of depression and mental health in social housing by Gonyea et al. (2018). It can be concluded that these three authors mentioned discrimination and depression which happened in social housing projects. These

psychological characteristics must be taken care of to sustain the mental health of social housing residents.

Moriyama et al (2019) discussed subjective well-being among social housing residents. The study in Japan focuses on elderly residents in the social housing project. The article was aligned with the study by Buckingham et al (2022), which also focuses on the health and well-being of social housing residents in the UK. Adding to the discussion is Perreault et al (2022), who support the other studies and discuss the mental well-being of social housing residents in Canada. Although the studies were conducted in different countries, these authors focus on the social housing residents' well-being. Therefore, well-being is an essential psychological characteristic in social housing projects.

Finally, Cho (2020) discussed residents' satisfaction with the social housing projects in South Korea. The study by Cho (2020) suggested the importance of the sociospatial quality of housing units spaced to residents' satisfaction and was mentioned by Salama (2022) in his article. Thus, residential satisfaction can not be neglected in the context of psychological characteristics in discussing social housing and psychological issues.

In conclusion, the authors mentioned stress, loneliness, depression, discrimination, mental well-being, and residents' satisfaction in the first theme, psychological characteristics. The most discussed psychological characteristics are discrimination and depression, residents' well-being, and residents' satisfaction. Psychological architecture is one of the architectural studies disciplines that architects or local authority can explore and implement in social housing projects to help fill these psychological characteristics gaps and related issues in the social housing projects.
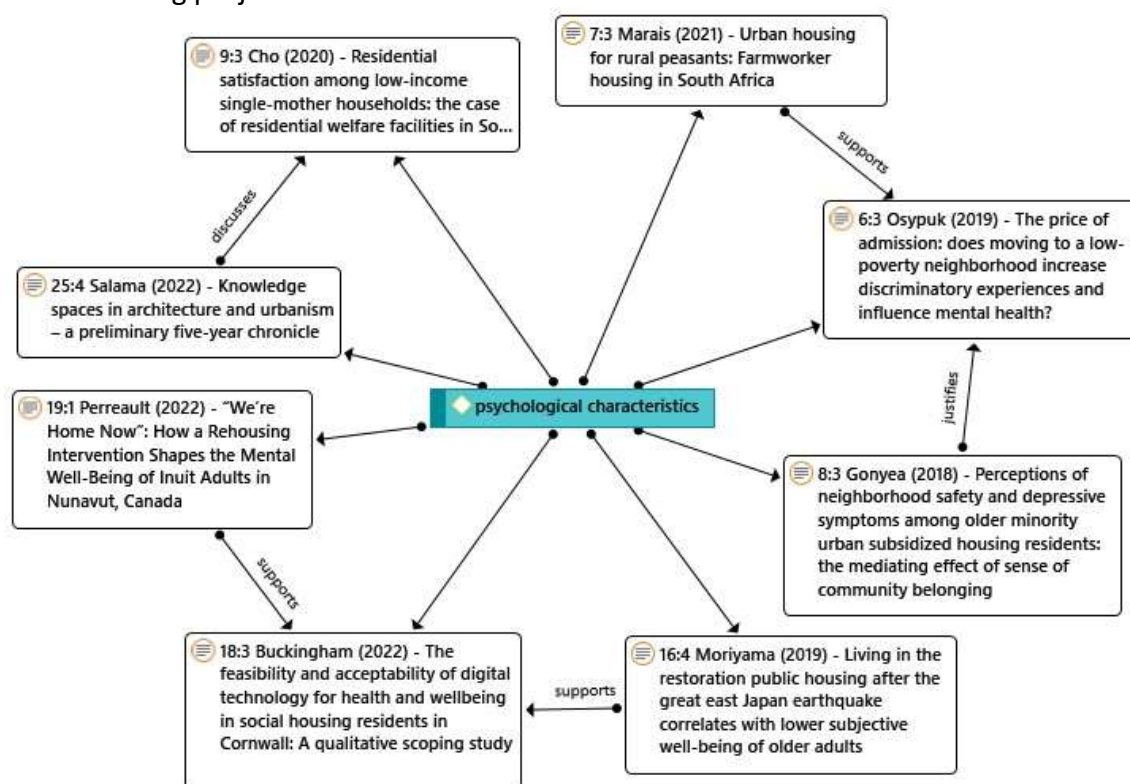

Figure 7: Theme 1 network

Theme 2: Building Community

Figure 8 shows the second theme of discussion about social housing and psychological issues. The second theme is building community in social housing projects. A community is defined as a group of people living in the same housing parameters. Adame et al. (2020) found the meaning of community as 'coming together as one, 'living together, and 'looking out for each other, from their study in the US. The meaning and practices of communities are shaped by different cultural backgrounds and frameworks (Adame et al., 2020).

Different cultures might define and practice community life differently. In their article, Adame et al (2020) mentioned community practices in Canada, including the environmental landscape, which might be different from their US studies. Apart from living nearby, the community members share some cultures, lifestyles, conditions, and common characteristics or interests. Building community in social housing and psychological issues discussion is residents' effort to set up and make their community alive and actively contribute to the residents positively. It primarily focuses on the connection between the community and the mental health of the residents in the social housing projects.

Adame et al (2020) explained the importance of events and gatherings in building a community. Regularly held events and gatherings create stability and familiarity among residents in social housing projects (Adame et al., 2020). This study also positively relates building community with a sense of belonging. However, Cole et al (2020), on the other hand, discuss community violence and the effect on posttraumatic stress symptoms among young residents in the social housing area. This implies that the community works positively and can produce adverse outcomes and impacts if not appropriately managed. Therefore, social housing residents must drive their community towards a desired positive outcome and benefit the residents as a whole.

Nevertheless, Agarwal & Brydges (2018) mentioned the importance of community programs to help residents in social housing projects avoid feelings of loneliness and social isolation. Community programs help to improve connectedness among residents in social housing projects. This is supported by Adame et al (2020), who propose the importance of events and gatherings, as community programs, in building community. Agarwal & Brydges (2018) relate community programs with health promotion and support the study by Ortiz (2019) about social housing and health. To conclude, the authors suggested that community programs may contribute to mental health improvement and connectivity among social housing residents. Therefore, community programs need to be designed according to the psychological needs of a local social housing project.

Ortiz (2019) mentioned that health improvement could be targeted through community, social-structural and environmental factors. This is supported by the study of Gonyea et al (2018), which discussed the relationship between neighborhood characteristics and mental health in the social housing project. Gonyea et al (2018) also study the relationship's mediating effect on a sense of community belonging. This study also justifies the relationship between the community and a sense of belonging in the social housing project, as Adame et al (2020) mentioned. Thus, a sense of belonging to the community or the social housing project is an essential factor for positive mental health and needs to be nurtured in the social housing community.

In conclusion, building a positive and active community in a social housing project might contribute to good psychological health conditions among residents. It is crucial to design a suitable community program that benefits the residents and prevents the community from

going astray and negatively impacting the residents and the social housing projects. Architects and local authority may include community spaces in social housing design to promote healthy community living in social housing projects.
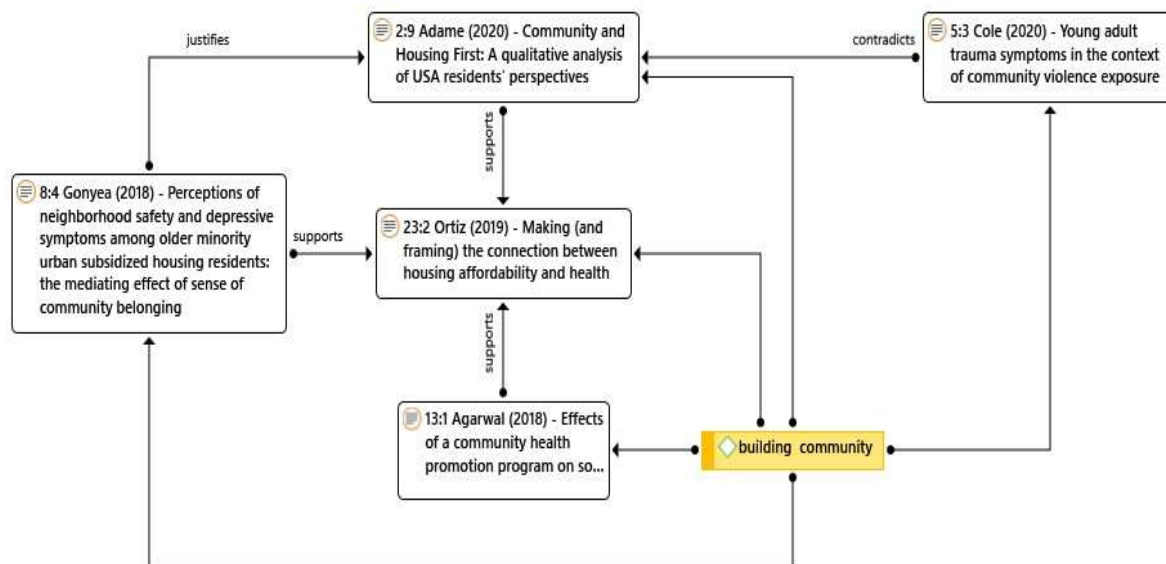

Figure 8: Theme 2 network

Theme 3: Spatial Needs
As the the need and demand in social housing grows, high-rise social housing projects play an important role especially in big cities. However, due to limited land and spaces, some of the social housing designs only fulfilling the basic living condition. Needs and lifestyles of the social housing residents were neglected (Nguyen et al., 2020). Hence, the third theme of discussion about social housing and psychological issues is spatial needs, as shown in Figure 9.

Spatial needs in social housing projects happen as residents are not involved in housing design and policy making. The difference in social housing design, policy, and residents' spatial needs creates a gap in user needs (Agyefi-Mensah et al., 2020). Thus, spatial modifications by residents in social housing projects are unavoidable and socially accepted in many places, although unparallel with the current social housing policy. Studies on social housing design and residents' needs and satisfaction help fill or shorten this gap for a better living experience in social housing projects.

Cho (2020) discussed residential satisfaction and sociospatial characteristics such as plan type and personal space. The study highlights the significance of the sociospatial quality of housing unit spaces in increasing residential satisfaction in social housing projects. The study also justifies the study about residential adaptation and spatial needs in social housing by (Agyefi-Mensah et al., 2020). Agyefi-Mensah et al (2020) mentioned the importance of spatial needs knowledge to architects in designing social housing projects and how previous researchers used residential satisfaction as a construct in design studies. Therefore, residents' satisfaction can indicate spatial needs in social housing projects.

Adame et al (2020) mentioned the concern of creating a sense of belonging in social housing projects. This study support Marais & Lenka (2021), who studied place attachment in social housing projects. Place attachment is a cultural value shared by the community and a collective understanding of social identity intertwined with place meaning (Marais & Lenka,

2021). According to Marais & Lenka (2021), researchers also use terms like 'sense of place,' 'place identity, 'community attachment,' and 'sense of community aligned with place attachment. Thus, creating a sense of belonging and place attachment may psychologically contribute positively to the spatial needs of the residents in social housing projects. Architects may design the social housing projects according to local cultural values, norms, and living practices to promote a sense of belonging and place attachment.

Ghafourian & Hesari (2018) studied the relationship between sense of place and resident satisfaction and explained the linkage of sense of place and place attachment, as mentioned in the study of (Marais & Lenka, 2021). Ghafourian & Hesari (2018) suggested that place identity, place dependence, and place attachment predicts residents' satisfaction directly, both individually as a variable and when grouped. For this reason, the literature undoubtedly found that sense of belonging, sense of place, and place attachment are essential discussions regarding spatial needs in social housing and psychological issues studies. It is also interrelated with residential satisfaction.

To conclude, architectural knowledge of spatial needs is vital for a social housing design that promotes a sense of place and place attachment. These variables contribute to residential satisfaction and living experience in social housing projects.
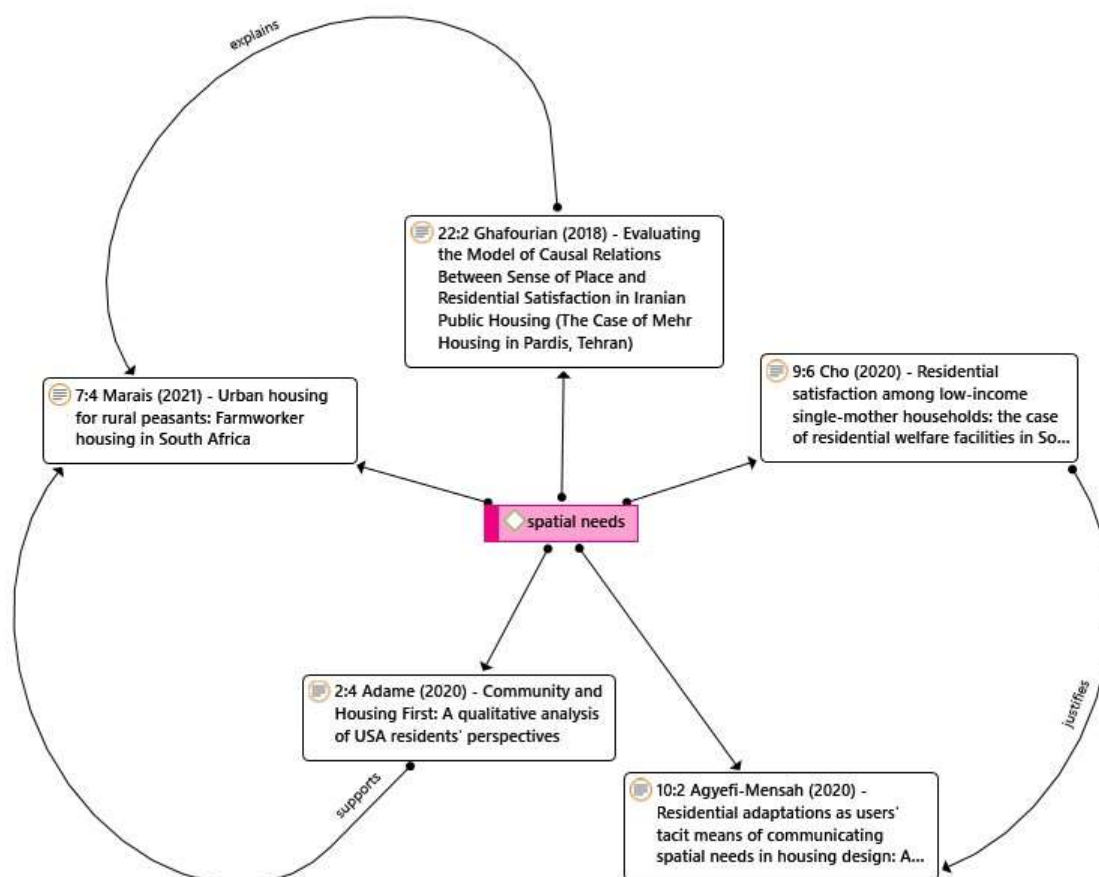

Figure 9: Theme 3 network

Theme 4: Support Experienced
Support systems for an individual living experience may be families, friends, neighbors, and a housing community. These are generally referred to as the informal support system. The

support system can also be in the form of formal support from organizations. An example would be financial living support by the government for low-income citizens. Previous studies also mentioned that residents with good support experience live psychologically healthier. Hence, a good support can be seen as an essential factor in the social housing residents' psychological well-being.

Suen & Thang (2018) mentioned that family and individual is the first line of support within the many helping hands approach. The government is expected to provide resources, a policy framework, and infrastructure in the social housing projects. There were many formal support programs conducted by the government such as community-based integrated care, and home-care services including medical, nursing, therapy, cleaning and befriender services (Suen & Thang, 2018). To conclude, government and non-profit organizations also provide good support experience to residents in social housing projects.

In this thematic review paper, Adame et al (2020) studied the importance of mutual support and cared in building community in social housing projects. Mutual support consists of caring and sharing behavior, helping one another in the neighborhood, respect and consideration among residents, and the management staff is providing community support in the social housing projects (Adame et al., 2020). The discussion in the article justifies the study about the importance of close friends as social support to residents' emotional well-being in the social housing projects in China (Liu et al., 2018). The study concluded that friendship is essential for good mental health in the social housing living experience. Hence, close friends are one of the vital support experienced by social housing residents.

However, Suen & Thang (2018) discussion about support experienced contradicts both studies by (Adame et al., 2020; Liu et al., 2018). Suen & Thang (2018) discussed that shattered familial relationships and conflicting familial roles resulted in an emotional and financial burden to low-income social housing residents. This study shows that family is still a crucial support system in the living experience, along with friends and the neighborhood community. Architects may contribute to a positive support experience by designing housing units suitable for a family lifestyle in social housing projects.

Ziersch et al (2018), in contrast, discussed residents' support for the idea of mixing social housing residents and private housing owners in the same housing vicinity. The study shows that most respondents support integrating social housing residents with private housing owners for community and social reasons (Ziersch et al., 2018). Housing policymakers may view this idea of mixed residency, and architects shall design suitable housing fulfilling the needs accordingly.

In conclusion, the literature highlights family, friends, and a healthy neighborhood community being the support experienced by residents in the social housing projects. The author also discussed residents' support for the mixed residency policy proposal in the social housing projects. Therefore, designing a platform for a good support experience may reduce psychological issues in social housing projects.
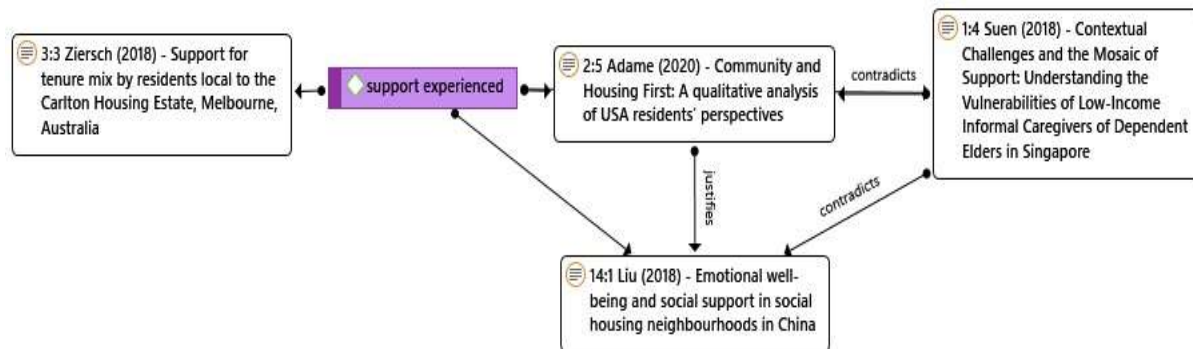
Figure 10: Theme 4 network

Discussion and Future Studies

This paper reviewed the current discussion trend on social housing related to psychological issues from 2018-2022. The thematic analysis of the available article published regarding social housing and psychological issues found that psychological characteristics, building community, spatial needs, and support experienced are the current trend of discussion. From the four discovered themes of discussion, psychological characteristics have been discussed the most in the literature compared to the other three. Psychological characteristics consist of psychological issues such as discrimination, stress, depression, loneliness, and residential satisfaction in social housing projects. Some psychological disciplines to be considered in architectural decision-making might include environmental psychology (Joye, 2007), humanistic psychology (Bosankić et al., 2019), and community psychology (Cole et al., 2020). Architects' knowledge in humanist architecture discipline and psychological architecture field contribute to social housing design that can fill the user needs gap in these psychological contexts.

As the urban population grows with limited space, vertical buildings and high-rise social housing projects play an important role in city development (Nguyen et al., 2020). However, some of the social housing designs are not inclusive of the needs and lifestyles of the social housing residents (Nguyen et al., 2020). Hence, humanist, and psychological architecture knowledge is vital to sustaining residential psychological health in social housing projects. Future studies relating to the psychological characteristics and spatial needs of social housing residents can be explored to shorten the user needs gap in social housing projects.

Additionally, Mouratidis (2021) mentioned that residents who receive social support have a happier living experience. Nguyen et al (2020) noted that low social support in high-rise, low-cost and social housing negatively impacts residents. Thus, support systems are one of the primary conditions to meet the requirements of housing satisfaction (Wu et al., 2020). Supportive systems need to be felt and experienced by residents to achieve housing satisfaction in social housing projects. In providing social housing, the government should meet the basic needs of the residential environment, including housing needs, community needs, and social needs of residents (Wu et al., 2020). Therefore, community building and wellbeing can be studied as mediator to the other themes or variables.

Contributions and Benefits of Study

This study provides an overview of the recent trend of discussion about social housing and the related psychological issues. The thematic finding of this review paper might shed light on future research direction and contributes to expanding knowledge in social housing projects and the psychological characteristics, community building, spatial needs, and a

healthy support system for living experience. This review paper enlightens the linkage between architecture, the built environment and psychological health of the social housing residents. This review paper also provides information for architects, public health practitioners, policymakers, researchers, and industry players in the field of housing development for a more inclusive design, policy, and development of social housing projects.

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