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Social Impact Assessment of Transitional Social Housing and Service Interventions for Low-Income Families: The Case of Hong Kong

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Abstract: Hong Kong is a typical global city with growing levels of substandard housing and a reduction in basic living quality. The government implemented a policy of transitional social housing (TSH) in 2018 to enhance the livelihood of low-income families. Nam Cheong 220 (NC220) is the first structural steel TSH project in Hong Kong. This study aims to evaluate the social impact and effectiveness of the project, and quantitative data were collected from individuals in three stages between 2020 and 2022. The first stage (T0) involved interviewing 106 successful applicants of NC220, followed by 91 participants in the second stage (T1) and 88 in the third stage (T2). Longitudinal analysis was implemented to scrutinize the changes observed over time, namely that the living area per capita substantially increased and housing expenses per capita decreased significantly due to residents' relocation to NC220. Housing conditions and community problems also showed significant improvement. Living satisfaction, neighbour and family relationships also demonstrated positive changes. The most difficult issue for residents was finding suitable housing after staying at NC220. The findings reveal that the first TSH in Hong Kong as an intervention significantly improved the housing circumstances of residents. The social dimensions of housing for enhancing residents' well-being is worth additional attention.

Keywords: transitional social housing; subdivided units (SDUs); social impact assessment; poverty; Hong Kong



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1. Introduction

1.1. Grassroots Housing Conditions in Hong Kong

The global housing shortage and the pervasive issue of poverty have a profound impact on the significance of housing development. The scarcity of affordable housing is a global challenge that affects millions of individuals across various countries. The housing problems in global cities have been a cause of concern for citizens and governments for a long time [1–5], and Hong Kong is a typical example. Increasing numbers of low-income families and the unaffordability of homeownership for citizens has contributed to the accelerating demand for private renting. Meanwhile, the production of public rental housing (PRH) cannot meet the growing demand of low-income families, which leads to a large public rental housing waiting list and long waiting times [6,7]. Increasing costs and rent in the private housing market negatively impact vulnerable groups who live in overcrowded and substandard housing, specifically in subdivided units (SDUs) [8,9]. SDUs generally refer to the subdivision of a flat in a building into two or more individual rooms [10]. It is also used as a general and inclusive term to describe inadequate housing in Hong Kong. It was estimated that 100,900 households (with 226,300 people) lived in SDUs

in 2020 [11]. Most of the urban poor population has no choice but to live in inadequate housing, such as SDUs [12], until they obtain public rental housing [13].

SDU residents face various substandard living conditions, which seriously influence their well-being. The damaged building structures of SDUs threaten fire safety [14]. Extra plumbing fixtures installed by landlords may lead to water seepage, which can cause property damage or create dangerous moulds for tenants [15]. The poor living conditions in SDUs affects the physical and mental health of residents, in addition to causing hygiene problems [16]. Especially during the COVID-19 period, the poor ventilation of SDUs enhanced the transmission of the virus [17]. Despite SDUs' low housing quality, the number of residents and level of rent for SDUs are increasing yearly [7].

1.2. Transitional Social Housing (TSH) as an Intervention

To alleviate the hardship faced by families in SDUs on the public rental housing waiting list, the Hong Kong Government announced the supported community initiatives on TSH in the 2017 Policy Address. The Task Force on Transitional Housing was established in 2018 by the Transport and Housing Bureau. Many TSH projects were proposed and are operated by different non-governmental organisations (NGOs). As of the 30 June 2023, over 7800 TSH units have been put into service and more than 13,200 units have had funding approved [18].

TSH is often used as an intervention for solving grassroots housing problems and homelessness in Western countries [19–22]. In addition to providing physical housing, some TSH programs provide social services. Washington [23] suggested that comprehensive services, such as career development and life skills training, in TSH not only served but also empowered the tenants. Although the backgrounds of the low-income population moving into TSH are diverse, different evaluative results demonstrated the positive effectiveness and the importance of social elements in housing projects [20,23,24].

Hong Kong has land available for short-term use, including idle land from the government and private companies, which can be used for building transitional housing. The modular integrated construction (MiC) technique was applied to speed up the building process and meet the basic requirements regarding fire prevention, wind protection, noise prevention, and environmental protection. TSH projects are mainly eligible for residents who have been on the waiting list for public rental housing for more than three years and for residents who live in SDUs or other inadequate housing [18]. Concerning the complicated building techniques and operation required for transitional housing, its stakeholders are trans-discipline. While many TSH projects in Hong Kong are proposed and operated by NGOs, the government, private landlords, and professionals [7] work in collaboration on many others to achieve quality assurance in all aspects of a project [25].

1.3. Nam Cheong 220 (NC220) Modular TSH Project

NC220 is the first TSH to adopt the MiC method on idle land in Hong Kong. It was initiated by The Hong Kong Council of Social Services (HKCSS) and operated by Tung Wah Groups of Hospitals (TWGHs). The project aims to provide affordable TSH to those families and persons who are on the waiting list for public rental housing or currently live in dismal and inadequate SDU conditions in order to improve their living quality. NC220 is located at 202 to 220 Nam Cheong Street in Sham Shui Po, built as one four-storey block with 89 units, which include 35 one-person household units (130 square feet (sq. ft.)), 29 two-person household units (179 sq. ft.), 23 three-person household units (224 to 292 sq. ft.), and two accessible units (293 sq. ft.) (Figures 1 and 2). Each unit has a toilet and bathroom, an air conditioner, an electric water heater, and an open kitchen with an electric cooker.



Figure 1. Construction of NC220 (source: <https://www.socialhousing.hkcss.org.hk/en/node/58>, accessed on 2 July 2023).



Figure 2. NC220 building (source: <https://www.socialhousing.hkcss.org.hk/en/node/58>, accessed on 2 July 2023).

Tenants with serious housing needs or who live in unsuitable housing are assessed by a scoring system based on their family circumstances, such as the number of family members, background, total household income, rent-to-income ratio, any safety hazards, or health problems in their current living environment, waiting time for public housing, and other special needs. The project started in August 2020, and 94 households (175 people) have moved in. In addition to tackling the housing problem, the project also provides social service support to help those low-income households build a community support network and identify more community resources and support to improve their living quality and gradually step out of poverty. The service operator TWGHs applied the shared economy

concept to encourage tenants to share their belongings, resources, skills, and time with other community members, thus building a mutual support community network and a large-scale shared living space in the Sham Shui Po District. Over the past two years, the NC220 community has been gradually established with various organised resident volunteer teams, such as the gardening and community meal teams. The NC220 project was ended in November 2022, and the modules were reallocated to another transitional housing project in Wong Yue Tan, Tai Po, for reuse by adopting the MiC method [26].

1.4. Aims of the Study and Significance

The HKCSS conducted a social impact assessment (SIA) commissioned by the Good Impact Assessment Institute to assess the value and social impact of the NC220 project and evaluate the overall effectiveness of TSH and similar service interventions. The aim of this assessment was help them to examine and formulate a model to meet the needs of disadvantaged groups in Sham Shui Po and to aid them in overcoming social isolation. The first two authors are the researchers of the Good Impact Assessment Institute responsible for this SIA. This study aims to examine the social impact on housing conditions, social interaction, social capital, and health outcomes of the NC220 project. It is hypothesized that housing conditions and the overall well-being of residents improved during their residence in the NC220 building. Given the innovations in transitional housing, our findings will be important for policymakers and NGOs to recommend improvements in the implementation of the projects and manage the social impacts of the strategy and programmes under the current model.

2. Materials and Methods

2.1. Data and Sample

The sampling strategy for this study involved collecting data from all residents of NC220. This included inviting all residents of NC220, regardless of the stage they were in, to participate in the study. Participants were residents of NC220 who were over 18 years old. Data were collected through online or paper questionnaires from August to October 2020 (T0), July to August 2021 (T1) and April to July 2022 (T2), i.e., a total of three times, where T0 was for pre-test and T1 and T2 were the post-tests. Participants in T0 were residents who had successfully applied for NC220. The data were collected before they moved into the units in NC220. There were 106 samples in T0. Participants in T0 were invited to join the second survey in T1, resulting in 91 samples. Participants in T0 and T1 were invited again for the third survey in T2, which had 88 samples. To implement a multifaceted social impact assessment, this study assessed the socioeconomic situation, housing circumstance, social capital, mental health, and family support of the residents. The detailed measurements are listed below.

2.2. Key Measurements

2.2.1. Demographic and Socioeconomic Variables

Participants were asked about their background and family conditions, including sex, age, education, marital status, current employment status, number of family members, family income, previous housing type, and living area.

2.2.2. Living Area

For the pre-test, the respondents were asked, “what is the total area (excluding the area shared with other households) of your living place (in square feet)?” The seven options ranged from “below 50 sq. ft.” to “above 300 sq. ft.”. The absolute living area was calculated as the median of the answers. In the post-test, the living area of respondents was noted from administrative data. Living area per capita was calculated considering the family size of the respondents.

2.2.3. Housing Cost

Housing cost for respondents was determined as the sum of rent, electricity fees, and water fees. To compare the housing costs across all periods, only cases that reported all three expenses were included. The housing cost per capita was calculated as the total housing cost divided by the number of family members. Housing affordability was estimated using the rent-to-income ratio.

2.2.4. Housing Conditions

There were 13 options for housing conditions, including 11 specific items, “others”, and “no such problems in the home”. The specific problems included (1) lack of space; (2) lack of privacy; (3) lack of light; (4) high temperatures in summer/low temperatures in winter; (5) dampness or water seepage on walls, ceilings, or floors; (6) corrosion in window frames or floors; (7) problems with pipes, drains, or water supply; (8) poor air circulation; (9) rodent or pest infestation; (10) light pollution (too much light in the external environment during the evening); and (11) the spalling of concrete, ceilings, or exposed steel reinforcement.

2.2.5. Community Problems

Respondents were asked, “which of the following do you think is a problem in the area where you live?” There were seven items to choose from: (1) noise (e.g., traffic, commercial activities), (2) noisy neighbours, (3) air pollution, (4) lack of public space, (5) crime (e.g., burglary, robbery, assault, or vandalism), (6) other, and (7) none of the above.

2.2.6. Social Capital

In our study, the short social capital assessment tool (SASCAT), amended by DeSilva, Huttly, Harpham, and Kenward [27], was used to assess structural and cognitive social capital. Structural social capital refers to networks and institutions that connect people. Cognitive social capital refers to reciprocity, sharing, and trust [28]. Regarding structural social capital, respondents were asked five questions, each to be scored from 1 to 5. They were required to rate their participation in social groups, such as local committees, public organisations, religious groups, or sports groups; how much these groups had helped them; the frequency of receiving help from neighbours, community leaders, the government, and charities; the frequency of solving problems with community members; and the regularity of approaching the community stakeholders about problems in the community. The total score of structural social capital ranged from 5 to 25. Regarding cognitive social capital, the respondents were asked four questions, which were to be rated on a five-point scale. They had to rate their level of trust for people in the community, how much they got along with most people, their participation in communities, and how much they felt taken advantage of by others. The total score ranged from 5 to 20, with a higher score referring to a higher level of cognitive social capital.

2.2.7. Mental Health

The Kessler psychological distress scale (K6) is a shorter version of K10 [29] and has high reliability and validity in measuring psychological distress [30]. Chan and Fung [31] validated the Chinese version of K6 among adolescents in Hong Kong. The six symptoms to be reported were feeling nervous, hopeless, restless, worthless, so depressed that nothing could cheer them up, and as though everything was an effort. Respondents were asked about the frequency of these symptoms in the past 30 days. The five-point Likert scale ranged from 1 (none of the time) to 5 (all of the time). Answers were recoded from 0 to 4, generating total scores from 0 to 24. The cut-off score was 13, meaning that respondents scoring higher than 13 were considered to have a serious mental illness [32].

2.2.8. Family Relationships and Support

The participants were asked three questions to assess change in family relationships and support after moving into TSH. Questions included “has your relationship with your family improved?”, with answers ranging from 1 (significant deterioration) to 5 (significant improvement); “has it affected the stress from caring for children?”, with options ranging from 1 (greatly increased) to 5 (greatly decreased); and “is it easier to find someone to help you when facing worsening family relationship?”, with choices ranging from 1 (more difficult than before) to 5 (easier than before).

2.2.9. Living Satisfaction and Neighbour Relationships

Residents were asked about their satisfaction with living in the housing unit and the local community and the neighbourhood relationships between the housing unit and the local community. The score ranged from 1 to 10, with a higher score meaning more satisfaction.

2.2.10. Difficulties during Moving out and Arranging New Housing

Respondents were asked what difficulties they faced when moving out of the housing project. Nine options were provided, and the residents needed to rank them from 1 to 9, with 1 being the most difficult and 9 being the least difficult. Difficulties included finding suitable housing, paying an advance deposit, paying rent, paying transportation costs for moving, looking for house movers, searching for school arrangements for children, adjusting to a new living environment, and decorating and adding furniture to the new house. After the project was completed, the data concerning the housing types of their new living situations were collected.

3. Results

3.1. Socio-Demographic Background

The descriptive results are presented in Table 1. A total of 30.2% of the respondents were male, and 69.8% were female. In terms of age, 34.0% of respondents were aged 18 to 39, 58.5% were aged 40 to 59, 7.5% were aged 60 or above, and the median age was 43.5 years. As for the educational background, primary school or below, secondary school, and tertiary education or above comprised 12.3%, 77.3%, and 10.4% of the sample, respectively. Regarding marital status, 32.1% were married, whereas 67.9% were single, widowed, separated, or divorced. Concerning current employment status, 47.5% of the respondents were working, while the remaining respondents fell into the following categories: unemployed; retired, student or homemaker; individuals with a permanent disability or chronic illness; and other, representing 18.8%, 22.9%, 7.9%, and 3.0% of the sample, respectively. A total of 38.7% of respondents had only one family member, 34.0% had two members, and 27.4% had three or more family members. Regarding the number of children under the age of 16 years, 85.2% had one, while 14.2% had two or more. Regarding previous housing types, private rental (whole flat) accounted for 4.7%, private rental (bed space, cubicle, rooftop housing) was 12.2%, and private rental (SDUs) was 67.0%. Public rental housing, hostels, and other represented 4.7%, 7.5%, and 3.8%, respectively. The median family income was HKD 10,000.

3.2. Living Area, Housing Expense, and Housing Circumstances

The housing conditions and circumstances of residents in T0, T1, and T2 were compared. The results are shown in Table 2. There were 11 people (11.8%) living in an area of less than 50 square feet (ft²) in T0, while no one lived in an area below 50 ft² in T1 and T2. On the other hand, the percentage of those who lived in an area above 200 ft² was 7.6% in T0, which increased to 27.8% in T1 and 29.9% in T2. The median living area was 100 ft² in T0 and 179 ft² in both T1 and T2. The living area of families significantly increased from T0 to T1 and T2. As for living area per capita, for a singleton, the median living area was 80 ft² in T0, which increased to 130 ft² in T1 and T2. For two-member families, the median living

area per capita was 55 ft² in T0, which sharply rose to 90 ft² in T1 and T2. For families with three members or more, the median values were 40 ft², 97 ft², and 97 ft² in T0, T1, and T2, respectively.

Table 1. Demographic and socioeconomic background (baseline, T0).

	N	%
Sex		
Male	32	30.2
Female	74	69.8
Age		
18–39	36	34.0
40–59	60	58.5
≥60	8	7.5
Median		43.5
		43.5
Education		
Primary school or below	13	12.3
Secondary school	82	77.3
Tertiary education or above	11	10.4
Marital status		
Married	34	32.1
Single/Widowed/Separated/Divorced	72	67.9
Current employment status		
Working	48	47.5
Unemployed	19	18.8
Retired/Student/Homemaker	23	22.9
Permanent disability/Chronic Illness	8	7.9
Other	3	3.0
Number of family members		
1 member	41	38.7
2 members	36	34.0
3 or more	29	27.4
Number of family members under 16 years		
1 member	46	85.2
2 or more	8	14.2
Previous housing type		
Private rental (whole flat)	5	4.7
Private rental (bed spaces, cubicle, rooftop housing)	13	12.2
Private rental (sub-divided units)	71	67.0
Public rental housing	5	4.7
Hostel	8	7.5
Other	4	3.8
Family income		
Median	10,800	

Housing expenses included rent, electricity fee, and water fee. In T0, the median rent, electricity fee, and water fee were 4450 HKD, 350 HKD, and 100 HKD, respectively. In T1 and T2, the median rent significantly dropped to 2515 HKD. The median electricity fee was 300 HKD in T1 and 250 HKD in T2, while the median water fee was 80 HKD in T1 and 100 HKD in T2. The housing expense per capita was calculated only for cases where rent, electricity fee, and water fee were all reported. The median housing expense per capita for one-member families was 3480 HKD in T0, 2693 HKD (n = 35) in T1, and 2655 HKD (n = 32) in T2. For three-member families, the figure was 2033 HKD in T0, which dropped to 1383 HKD in T1 and 11,381 HKD in T2. The median rent-to-income ratio sharply dropped from 40.0% in T0 to 24.0% in T1 and 23.0% in T2.

Table 2. Living area and housing expenses.

	T0		T1		T2	
	N	%	N	%	N	%
Living area (ft ²)						
Below 50	11	11.8	0	0	0	0
51–100	39	41.9	1	1.1	1	1.1
101–150	29	31.2	33	36.7	31	35.6
151–200	7	7.5	31	34.4	29	33.4
Above 200	7	7.6	25	27.8	26	29.9
Mean		125		183		186
Median		100		179		179
	N	Median	N	Median	N	Median
Living area per capita (ft ²)						
1 member	37	80	39	130	31	130
2 members	32	55	36	90	28	90
3 or more	24	40	37	97	28	97
Housing expenses (HKD)						
Rent	96	4450	88	2515	87	2515
Electricity fee	83	350	79	300	76	250
Water fee	79	100	71	80	73	100
Housing expenses per capita (HKD)						
1 member	29	3480	17	2693	17	2655
2 members	29	2705	24	2084	25	1848
3 or more	18	2033	25	1383	25	1381
Housing affordability						
Rent to income ratio	77	40.0%	70	24.0%	71	23.0%

Note. ft² = square feet.

Housing conditions and community problems data referred to the living experience of respondents (Table 3). The most severe issue was the shortage of space in T0 (77.5%), which dropped to 54.0% in T1 and 36.4% in T2. The second most common problem was poor ventilation in T0 (63.7%), which dropped to 54.0% in T1 and 36.4% in T2. More than half of the residents faced rat or insect problems in T0 (63.7%), T1 (51.7%), and T2 (53.0%). On the other hand, in T0, more than half of the residents faced problems regarding high temperatures in summer or low temperatures in winter (56.9%); damp walls, ceilings, or floors (53.9%); lack of light (51.0%); and lack of privacy (50.0%). However, the share of respondents with these problems reduced to 46.0%, 48.3%, 42.5%, and 47.1%, respectively, in T1 and further decreased to 15.2%, 16.7%, 16.7%, and 28.8%, respectively, in T2. Respondents who answered “no such problems in the home” comprised 3.9% in T0, rising to 26.4% in T1 and 31.8% in T2. Overall, the housing conditions improved significantly from T0 to T1 and T2.

Regarding community problems, most people reported a lack of open public spaces in T0 (66.7%) compared to 55.2% in T1 and 31.0% in T2. Around 50% of respondents faced problems of air pollution (51.5%) and noisy neighbours (48.5%) in T0, which was almost the same as T1 (47.1% and 49.4%, respectively), but declined to 14.1% and 23.9%, respectively, in T2. However, respondents who reported the problem of noise (from business, traffic, etc.) increased from 65.7% in T0 to 85.1% in T1 and 84.5% in T2.

Repeated measures analysis was conducted to examine differences in social capital, mental health, family relationship and support, living satisfaction, and neighbour relationships across T0, T1, and T2 (Table 4). For social capital, the score of structural capital slightly increased from 9.69 in T0 to 9.96 in T1 but dropped to 8.39 in T2. In terms of cognitive social capital, the score rose from 14.51 in T0 to 14.84 in T1 and 15.01 in T2.

Table 3. Housing conditions and community problems.

	T0		T1		T2	
	N	%	N	%	N	%
Housing conditions						
Shortage of space	79	77.5	47	54.0	24	36.4
Lack of privacy	51	50.0	41	47.1	19	28.8
Lack of light	52	51.0	37	42.5	11	16.7
Too hot in the summer/too cold in the winter	58	56.9	40	46.0	10	15.2
Damp walls, ceilings, or floors	55	53.9	42	48.3	11	16.7
Rot in window frames or floors	28	27.5	26	29.9	2	3.0
Problems with plumbing, drains, or water supply	31	30.4	38	43.7	6	9.1
Poor ventilation	65	63.7	47	54.0	24	36.4
Rat or insects	65	63.7	45	51.7	35	53.0
Light pollution	12	11.8	28	32.2	4	6.1
Spalling of concrete, ceilings, or exposed steel reinforcement	42	41.2	28	32.2	0	0.0
Other	-	-	16	18.4	7	10.6
No such problems in the home	4	3.9	23	26.4	21	31.8
Community problems						
Noise (e.g., traffic, business)	65	65.7	74	85.1	60	84.5
Noisy neighbours	48	48.5	43	49.4	17	23.9
Air pollution	51	51.5	41	47.1	10	14.1
Lack of open public spaces	66	66.7	48	55.2	22	31.0
Criminal activity	30	30.3	33	37.9	1	1.4
Other	-	-	4	4.6	3	4.2
None of the above	-	-	28	32.2	17	23.9

Table 4. Comparison of key variables between T0, T1, and T2.

	T0		T1		T2		F/t	p
	M	SD	M	SD	M	SD		
Social capital								
Structural social capital	9.69	3.40	9.96	3.45	8.39	3.56	5.65	0.004
Cognitive social capital	14.5	2.82	14.8	2.32	15.0	2.66	0.95	0.388
Mental health								
K6 score	11.2	3.55	10.7	4.54	12.1	5.07	3.01	0.05
Family relationships and support								
Family relationship	-	-	4.31	0.79	3.94	1.12	2.13	0.041
Stress from taking care of children	-	-	3.94	0.89	3.74	1.16	0.91	0.370
Find someone to help if facing relationship problems	-	-	4.03	0.81	4.08	0.77	-0.35	0.729
Living satisfaction and neighbour relationship								
Living in the unit	4.25	1.83	7.83	1.55	7.30	1.93	87.5	<0.001
Living in the local community	5.19	2.28	7.52	1.46	7.41	1.86	36.5	<0.001
Neighbour relationships in the unit	5.57	2.62	8.10	1.57	8.06	1.98	36.7	<0.001
Neighbour relationships in the local community	5.85	2.50	7.63	1.67	7.49	2.07	20.0	<0.001

Notes: M = mean; SD = standard deviation; F/t = F-value in ANOVA/t-value in *t*-test.

Compared with mental health scores in T0 (M = 11.17, SD = 3.55), the score dropped slightly in T1 (M = 10.71, SD = 4.54) but increased in T2 (M = 12.10, SD = 5.07; F = 3.01, $p = 0.05$). The family relationship score remained high in T1 (M = 4.31, SD = 0.79) and T2 (M = 3.94, SD = 1.12), while the mean score of stress from taking care of children was 3.94 in T1 and 3.74 in T2. Regarding living satisfaction, there was a statistically significant difference (F = 87.5, $p < 0.001$). The satisfaction score of 4.25 in T0 significantly increased to 7.83 in T1 and 7.3 in T2. In terms of satisfaction with neighbourhood relations in the unit, the score increased from 5.19 in T0 to 7.52 in T1 and 7.41 in T2 (F = 36.7, $p < 0.001$). The trend was similar in terms of satisfaction with living in the district community (F = 36.5,

$p < 0.001$) and neighbourhood relationships in the district community ($F = 20.0$, $p < 0.001$) across T0, T1, and T2.

Table 5 shows the data on difficulties during moving out and new house arrangements. The most difficult issue was finding suitable housing ($M = 2.36$, $SD = 2.19$) and the second and third were paying an advance deposit ($M = 3.65$, $SD = 1.82$) and paying rent ($M = 3.98$, $SD = 2.07$), respectively. As for new housing arrangements, 25.5% of residents were allocated to public housing, 62.8% were moved to another TSH, and 11.7% were moved to private rental housing (Table 5).

Table 5. Difficulties during moving out and new house reallocation.

Difficulties during Moving Out		
	M	SD
Finding suitable housing	2.36	2.19
Paying advance deposit	3.65	1.82
Paying rent	3.98	2.07
Transportation costs for moving	4.53	1.79
Looking for house movers	5.07	1.92
School arrangements for children	5.31	2.54
Adjustment to new living environment	5.44	1.99
Decoration and furniture addition in new house	6.13	2.24
Other	8.53	1.26
New House Reallocation		
	N	%
Public housing	24	25.5
Other transitional social housing	59	62.8
Private housing	11	11.7

Notes: M = mean; SD = standard deviation.

4. Discussion

4.1. Significant Improvement in Housing Conditions

The housing conditions of residents significantly improved. Results highlight that the living area significantly increased after moving into social housing. Housing expenses, including rent, electricity, and water fees sharply reduced from T0 to T1 and T2. Residents' rent-to-income ratio also reduced significantly after they moved into TSH. Moreover, the overall living conditions improved significantly, and most residents were satisfied with the housing. Many housing problems, such as lack of privacy, poor living conditions, and community problems, including noisy neighbours and criminal activity, were significantly reduced. The living environment and quality of life showed substantial improvement. Since many TSH residents were reallocated from SDUs, the results showed that TSH is a critical housing project for improving the housing circumstances of SDU residents facing problems of small living areas and high rent [8,14].

Nevertheless, there is still room for improvement. Some tenants reported problems with rats and insects, which is also a problem commonly seen in SDUs [16,33] and a problem that is expected to be resolved. Noise was also commonly reported as a community problem. One possible explanation is that NC220 is located near a construction site and the main road in Sham Shui Po. The continuous noise from vehicles and traffic lights may further affect residents' sleeping quality and mental well-being. In addition, tenants were concerned about the lack of public space, including space for drying clothes and recreational purposes. As a community-based TSH programme, one of the aims was to build a community support network to enhance a sense of community. However, due to the limited land area in NC220, the only public space available was the corridor between the TSH and the adjacent site. This made building extensive recreational facilities challenging. High-quality community public spaces may be an important feature for developing and enhancing the sense of

community [34]. In addition to considering the rent level and indoor infrastructure, TSH projects also need to take into account issues such as site selection, geography, and noise.

4.2. Social Dimensions of TSH

TSH is not only a physical building but provides an environment to enhance residents' social functioning and relationship. The social work team in NC220 actively served the residents by organising various social activities and linking community resources. Even when facing financial and psychological distress during the COVID-19 pandemic, an increase in the score of satisfaction with neighbourhood relations revealed that residents remained positive in the social, neighbourhood, and family relationships and developed a solid cohesion and sense of belonging to the community. The positive role of social services in the community is consistent with the findings of previous studies [20,23,24,35,36]. Moreover, the results showed significant improvement in family relationships among residents and a reduction in the stress of childcare. Childcare support from neighbours, which was crucial in alleviating life stress, was not available in previous living spaces.

NC220 emphasised the importance of the social dimension of housing beyond providing a home environment to being a source of connection with the neighbourhood and community. The social work team played a key role in TSH, connecting residents so they could collaborate. They organised different activities that allowed residents to get to know each other and have more opportunities to serve the community. Nevertheless, more social services should be provided. Low-income populations have difficulties in different aspects of life, including financial, social, physical, and mental health. The results showed that many residents still face different levels of mental distress. It was recommended that future TSH projects could provide more mental health support services. In addition, more space in the TSH project is needed to hold social activities, utilise residents' skills, and help them build community capital.

4.3. Moving Out and Arranging New Housing

NC220 was a two-year TSH project, and residents were asked to move out when the project duration was due to end. About one-quarter of residents were relocated to public rental housing, which is normally perceived as decent and affordable housing in Hong Kong and desired by residents. However, other residents had to move to other transitional or private housing. Some residents were reluctant to move to private housing because these flats are usually small with high rents. Results suggest that the residents found it difficult to obtain suitable housing due to their inability to pay the high rents and deposits. Moreover, transportation costs and adjustment to a new environment were also reported as common concerns by the residents. The change in living conditions when moving to less favourable places, may lead to increased stress, anxiety, and a decline in mental wellness. It is recommended that the duration of TSH projects should be lengthened to provide adequate buffer time for residents to move out. Subsidies and resources for moving and setting exit plans could also help relieve the anxiety of residents.

4.4. Impact of COVID-19

Since the COVID-19 outbreak occurred during the NC220 project period, it is important to note that the results of the SIA were affected by the pandemic. Many studies showed that the COVID-19 pandemic caused social isolation [37,38] and lowered people's social capital [39]. The mental health of the general population in Hong Kong was also harmed by the pandemic [40,41]. During our research data collection, the social capital, interpersonal relationships, and mental health of residents living in NC220 might have been affected by the pandemic. It was suggested that residents follow social distancing guidelines, and they lost their jobs due to the pandemic or were not allowed to join social activities because of the quarantine orders. The impact of the pandemic was especially significant during T2, which was the peak of the pandemic in Hong Kong [42]. Thus, the interpretation of survey results should take the impact of the COVID-19 pandemic into account.

4.5. Policy Implication

There were several policy implications of this study. Firstly, increasing the number of TSH units and extending the tenancy period may help alleviate grassroots housing problems. Many TSH residents moved from SDUs, cubicles, and other poor housing. Even if they were on the waiting list for public housing, there was no guarantee that they would be able to move to public housing after the two-year tenancy period. The average waiting time for public rental housing is longer than five years for family applicants [33]. In order to provide residents with a stable life, it is recommended that the tenancy period be flexibly increased to three years or more. This would reduce the inconvenience of the transition period. The recent policy of Light Public Housing may provide a longer period of residence for the tenants, which could enhance living stability. The social impact of Light Public Housing is worth further investigation. In addition, increasing the number of appropriate TSH units in various districts could provide more choices for residents to find a new home. For NC220, around 63% of residents finally settled down in other TSH projects. The provision of additional TSH will help existing SDU households to move in and help those who are about to end their TSH tenancies find suitable homes, thus increasing community support. As of February 2023, 6980 TSH units have been put into service and another 13,940 units have been approved for funding [11]. However, there were 133,700 general applications and 96,200 non-elderly one-person applications as of December 2022 [43]. More TSH projects could help enhance the living situation of low-income families.

Secondly, there is a need to improve TSH environments and site selection. TSH provides more suitable living conditions for residents who live in SDUs in terms of size, facilities, and rent. However, the environments and locations of TSH still need to be improved. In NC220, proximity to a construction site and the main road affected the residents' daily lives and work, leading to issues such as noise, rodents, and pest infestation. In the future, environmental and noise issues should be considered for site selection. TSH projects also aim to improve residents' social skills in order for them to contribute more to the community and increase social resources. In addition to the necessary housing facilities, it is recommended that more indoor and outdoor activity spaces be reserved for daily use by residents and for activities by staff. This can help enhance social skills, build neighbourly relationships among low-income families, and meet the needs of children's recreational activities.

Thirdly, allocating more social welfare resources to provide diversified support services is recommended. TSH services should be further developed to help residents improve their physical and mental health and social spirit. This is especially important for large-scale TSH projects with hundreds of low-income families living together. Residents can use social services more easily, and their service needs can be met. The government, NGOs, or charity foundations can subsidise future TSH projects to create more community-based internships, volunteer subsidies, and job training services for low-income residents. This will enable the residents to actualise their potential and increase their resources or income. Additionally, subsidising the establishment of community support health stations to focus on residents' physical and mental health can support the provision of corresponding services and promote holistic health. On the other hand, the choice of site is also critical. For example, Sham Shui Po is an old urban area with good social welfare resources. If the TSH or Light Public Housing projects are situated in rural areas or in newly developed areas, the problems concerning a lack of welfare services, schools, and social support can be much more significant.

Fourthly, the TSH project may serve as a model for other housing projects in Hong Kong in the future. NGOs have actively participated in the planning and operation of TSH projects. The service model has been successful in influencing similar housing projects, such as Light Public Housing. The involvement of NGOs and the social services enables residents to establish a sense of community and mutual support and promotes holistic health. It may also influence the future planning of public housing. Besides enhancing the

living conditions of residents, holistic social service intervention could also improve the quality of life of people.

Finally, despite the potential benefits, TSH projects may encounter various challenges, such as the limited capacity and resources of NGOs and the need for collaboration between NGOs, private companies, and the government. Social workers and NGOs may take up multiple roles, including management, administration, service planning, and provision, which can be demanding or potentially conflicting. On the other hand, the construction cost of TSH units also deserves attention. It is estimated that a single unit costs around HKD 550,000 (around USD 70,000). Although some units are to be reused in another TSH projects, moving and replacing the units is costly. In addition, residents also expressed that they faced several difficulties when relocating, including difficulty finding a suitable new residence and the high cost of relocation.

4.6. Limitations

There were some limitations in our study. First, the COVID-19 pandemic impacted the longitudinal study for NC220. The TSH project period overlapped with the pandemic, negatively affecting the residents' social capital, relationships, and mental health. It led to interference in the comparison of key variables among T0, T1, and T2. Second, the data gathered concerning mental health, family relationships, and social capital are self-reported and not clinically assessed. Third, residents had increased psychological distress near the end of the project as they were asked to move out. The anxiety of moving out influenced the analysis of the results in T2 and the comparison among T0, T1, and T2.

5. Conclusions

The present study demonstrated the results of the SIA in the first TSH project in Hong Kong. The TSH project significantly improved the housing circumstances of residents, resulting in lower housing expenses, better conditions, and larger living spaces. It served as a crucial measure to enhance the living conditions for people living in poor housing, such as SDUs. The social dimensions of TSH, including social support, social services, and neighbour relationships, were found to be significant for enhancing the well-being of residents. It is recommended to extend the duration of accommodations. Moreover, the arrangements for moving out from the temporary housing require further attention. The TSH program not only acts a service model to inspire other local housing programs, such as Light Public Housing and Public Housing, but also serves as a valuable model for tackling global poverty, particularly in densely populated urban areas.

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