

**Perception of extreme hot weather and the corresponding adaptations among older adults and service providers
- a qualitative study in Hong Kong**

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Perception of extreme hot weather and the corresponding adaptations among older adults and service providers – a qualitative study in Hong Kong

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Background: Extreme hot weather events are happening with increasing frequency, intensity and duration in Hong Kong. Heat stress is related to higher risk of mortality and morbidity, with older adults being particularly vulnerable. It is not clear whether and how the older adults perceive the increasingly hot weather as a health threat, and whether community service providers are aware and prepared for such future climate scenario.

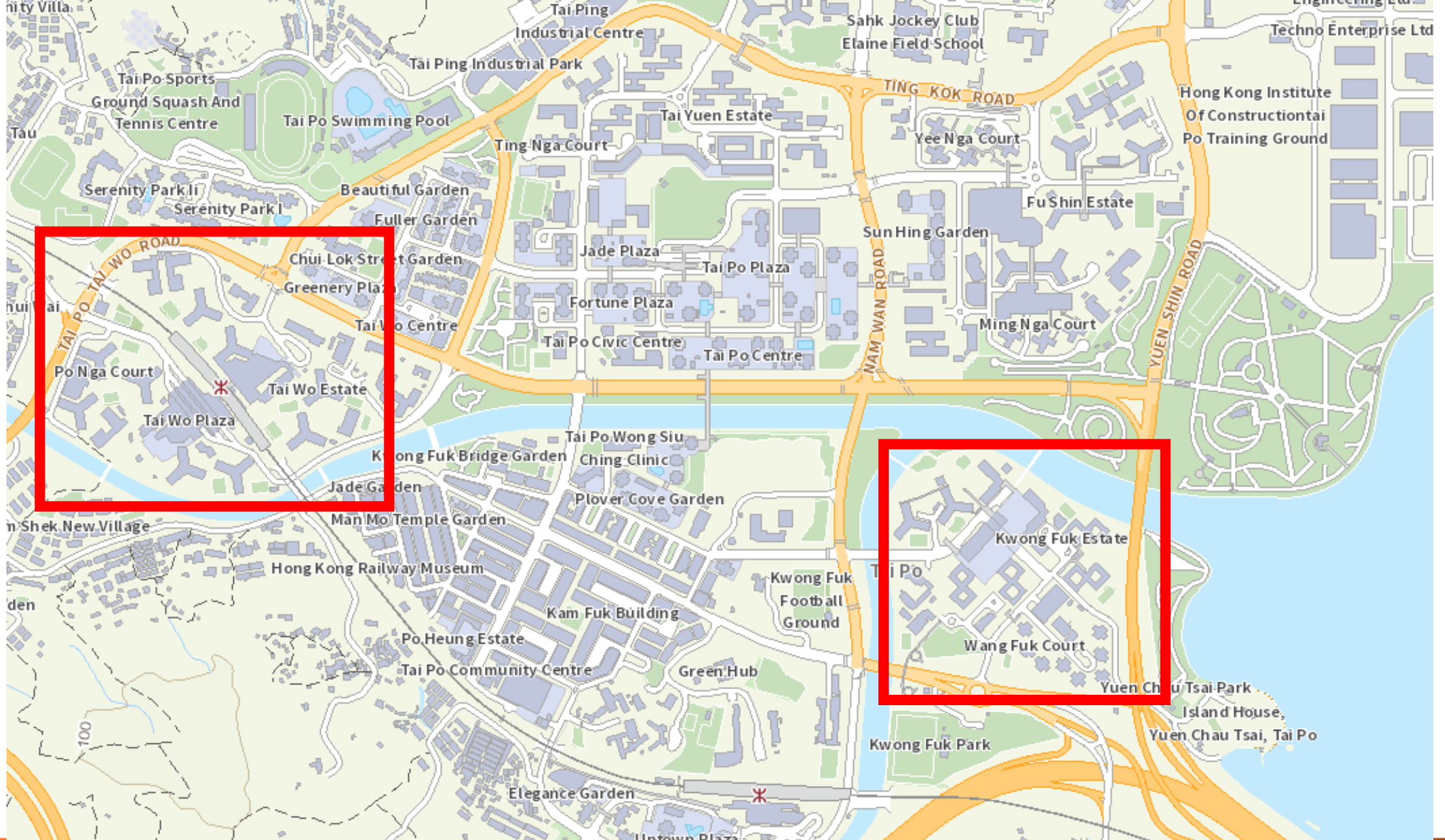
Methods: We conducted semi-structure interviews with 46 older adults, 18 staff members of community service providers and two district councillors of Tai Po, a north-eastern residential district of Hong Kong. Transcribed data were analysed using thematic analysis until data saturation was reached.

Objective

- Extreme hot weather events are happening with **increasing frequency, intensity and duration** in Hong Kong.
- Heat stress is related **to higher risk of mortality and morbidity**, with older adults being particularly vulnerable.
- It is not clear whether and how the older adults perceive the increasingly hot weather as a health threat, and whether community service providers are aware and prepared for such future climate scenario.

Methods

- IOA has conducted 8 focus groups with a total of 46 older adults in May 2021 in Tai Po district (4 in Kwong Fuk Estate and 4 in Tai Wo district)
- Additionally, a focus group interview with District Councillors and NGO staff members from across HK in July 2021
- We performed a qualitative analysis to understand the older people's perception to hot weather, the solutions they have used in the face of hot weather, and the obstacles that they faced

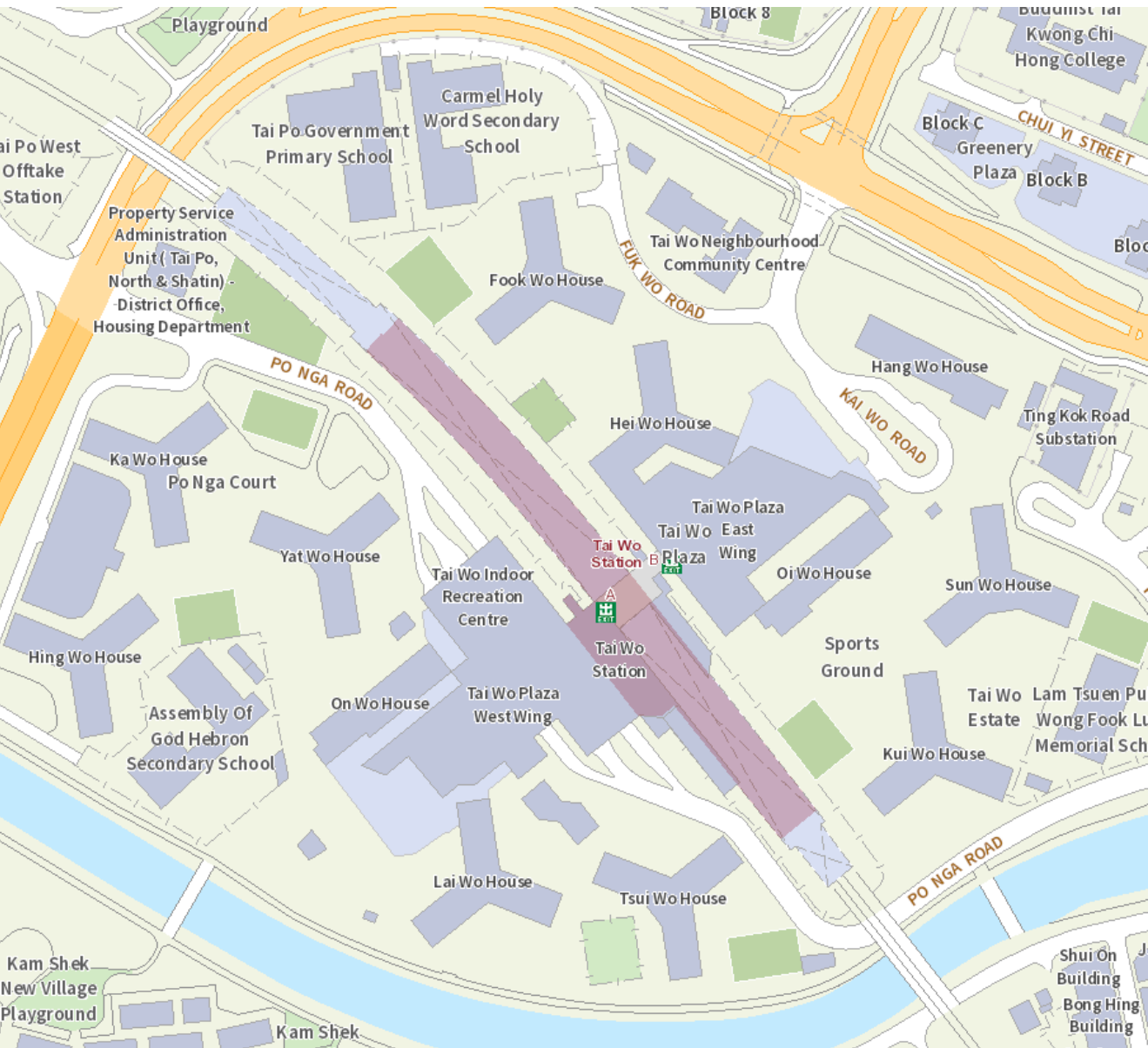


Kwong Fu



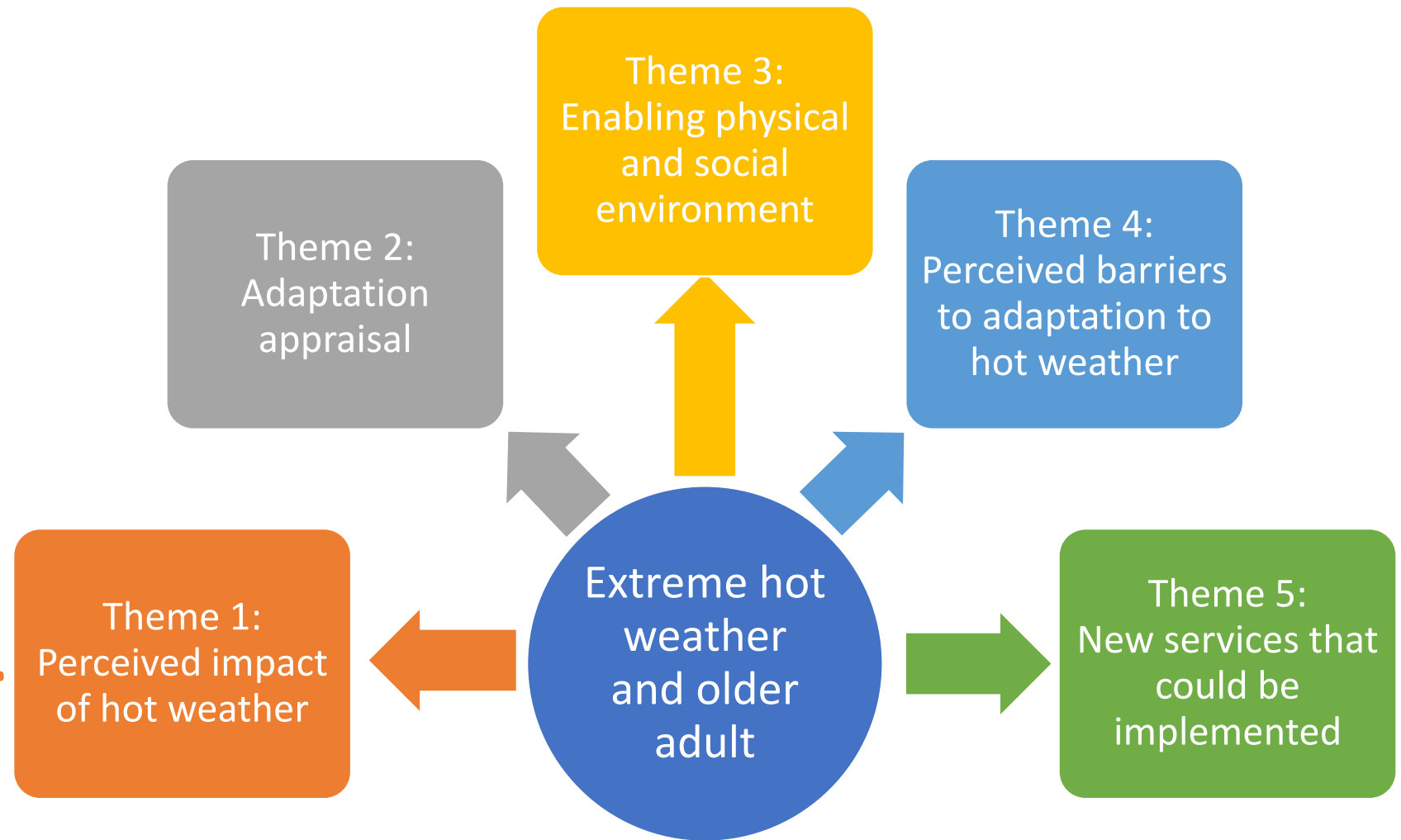
- Double tower building design

Tai Wo



- Y-shaped building design

Themes emerged



Themes emerged

Extreme hot weather and older adult

Theme 1:

Perceived impact of hot weather

- 1.1 – Changing pattern of hot weather
- 1.2 – Physical health
- 1.3 – Mental health
- 1.4 – Reduced social activities

Theme 2:

Adaptation appraisal

- 2.1 – Indoor strategies
- 2.2 – Outdoor strategies

Theme 3:

Enabling physical and social environment

- 3.1 – Accessible public space with cooling features
- 3.2 – Housing design
- 3.3 – Channels to access hot weather information

Theme 4:

Perceived barriers to adaptation to hot weather


- 4.1 – Economic concern
- 4.2 – Perspectives from Chinese medicine or general dislike of air conditioning
- 4.3 – Outdoor space not conducive to cooling
- 4.4 – Lack of discussion in the public discourse

Theme 5:

New services that could be implemented



Changing pattern of hot weather

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- The participants agreed that summers in Hong Kong are becoming **increasing hotter** and **arrive significantly earlier** than years ago.

*“Compare to the old-time, the weather condition **now is not as cool, nor is the temperature at night**. It’s not comfortable... when I work in the daytime, it is tough, and I can’t stop sweating.”*

-Women, aged 70, Kwong Fuk

*“It’s hot, very hot... especially the recent hot weather... **the hot weather came earlier than before**... it used to come in June or July (now it’s not yet mid-May)”*

-Women, aged 65, Tai Wo



Perceived impact of hot weather on health



Physical Health

- Influence sleep quality
- Feeling headache and dizziness
- Feeling racing heart

*“(Will you suffer from insomnia?) Yes, I will... We need to **push back our bedtime** until late at night.”* -Women, aged 50, Kwong Fuk

*“When I am hot, my face feels like boiling, I cannot breathe normally and **my heart beats very quickly**”* -Women, aged 65, Tai Wo



Perceived impact of hot weather on health



Mental Health

- Feeling irritable during hot weather

*“Sometimes the hot sunlight **annoys me**, especially the air is still, I become impatience and **easily irritated** under this kind of weather.”*

-Women, aged 69, Kwong Fuk

*“When the weather is hot, **our mood can be affected easily**. When you get irritated, your blood pressure would go up... people can **get irritated easily when feeling hot** in the hot weather.”*

-Women, aged 63, Tai Wo



Reduced social activities

- Go out less to avoid heat in hot summer

*“I **will not leave home often** during the summer, won’t do it unless necessary.”*
-Women, aged 70, Kwong Fuk

- Reduced social gathering

*“It **must be (affecting me to see my friends or family)**. I won’t leave home unless it’s necessary, don’t you think so? It’s too hot.”*
-Women, aged 65, Kwong Fuk

- Reduced physical activities outdoor

*“(Normally,) I will walk for an hour. If the weather today is as hot as yesterday, I **will only walk for half an hour.**”* -Men, aged 72, Tai Wo

Adaptation appraisal – how older people deal with hot weather?

Indoor strategies

- Open windows / doors and turn on fan
- Bathing
- Drink more water / cold drink
- Air-conditioning

*“When it is hot, I will **turn on the air conditioning or electric fan... or take a shower...**”*
-Women, aged 63, Kwong Fuk

*“The best way to do it is to **open the windows and doors**, not turn on the air conditioner... when the windows are opened, **the breeze can come into the apartment** by the convection currents.”*

-Women, aged 70, Kwong Fuk

*“We **drink plenty of water** during the summer.”*

-Women, aged 74, Tai Wo

Adaptation appraisal – how older people deal with hot weather?

Outdoor strategies

- Choose to go out at a time of the day when heat is less intense, i.e. early morning
- Plan a route to enjoy shaded walkways
- Bring necessary things for cooling
- Stay in air-conditioned malls or local community centres

“If I am going to do exercise in the morning, I will go early to avoid the hot sunlight, so not as hot.” -Women, aged 65, Tai Wo

“Inside my backpack, there are a bottle of water, a parasol, a fan, a towel and miscellany. I always use the parasol when I walk and wipe away my sweat with the towel.”

-Women, aged 74, Kwong Fuk

Enabling physical and social environment

- The participants were satisfied with the outdoor environment

*“The facilities are pretty good over there (Mui Shue Hang). It is a **shaded area** in the afternoon, no direct sunlight.”* -Men, aged 67, Tai Wo

- Most of them access hot weather information from radio and TV channels

*“Something was shown on the **television** that said if a person stays under the sun for too long, it may cause dizziness and fall. It reminds people to **be alerted of the hot weather** today.”* -Women, aged 70, Kwong Fuk



- Mui Shue Hang Playground

Housing Design

- The homes in **double-tower design** (so-called hash-shaped) are much cooling than outside

*“My apartment is inside a hash-shaped building. It’s comfortable, **won’t get too hot during summer** and not too cold during winter. I have never turned on the air conditioner.”*
-Women, aged 84, Kwong Fuk

- Some said they feel good ventilation in **Y-shaped towers** while some disagreed

*“Since I live in the corner flat inside a Y-shaped building, **the breeze can reach my flat** through convection currents, so it is not very hot.”*
-Women, aged 63, Tai Wo



Housing Design

- Problem with orientation of the flat
- directly facing the sunlight builds up heat in the flat

*“There is nothing I can do. Our apartment is faced to the west, **the sun starts to shine on the apartment at noon until 5-6 pm. It is quite suffering... can't avoid the heat from the sun living in an apartment facing west.**”*

-Women, aged 84, Kwong Fuk



Perceived barriers to adaptation to hot weather

Economic concern

- The costs for electricity have been concern given they were all retired
- Could not afford to rent more proper housing



“We try to push back the time to turn on the air conditioner. For example, we will turn on the air conditioner when we are ready for bed. We won’t turn it on beforehand because [the cost of electricity is expensive.](#)”

-Women, aged 69, Kwong Fuk

“I have come across clients who lived in [squatters](#) which was built from zinc and iron sheets. You could not imagine how they fare. It was hot outside – some [30 degrees](#), but even hotter inside – around [40 degrees.](#)”

-Men, DECC worker

Perceived barriers to adaptation to hot weather

Perspectives from Chinese medicine or general dislike of air conditioning

- The “cold” and “damp” from AC could make them feel more tired and musculoskeletal pain
- They prefer natural wind rather than AC

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“Elderly people believe in nature, or nature in the perspective of Chinese medicine. They believe the cool air from the [air conditioner is not good for their health.](#)”

-Women, NGO worker

“Older adults usually like to sit at the parks and socialize. I’ve once invited them to come to the community centre because it was hot outside. But they seemed not interested in getting rest under air conditioning. [They rather chose the park.](#)”

-Men, NEC worker

Perceived barriers to adaptation to hot weather

Outdoor space not conducive to cooling

- Not adequate shading devices
- The malls with AC seems not to welcome older adults to sit and relax



*“The shopping malls here are too small to walk around... But the malls **don’t provide seats** as well... you can only walk or stand.”*

-Women, aged 62, Kwong Fuk

*“Before the renovation of the Tai Wo Market, there were seats provided for people to rest. Now, **the seats are removed** after the renovation and due to infection control.”*

-Women, NGO worker



Perceived barriers to adaptation to hot weather

Lack of discussion in the public discourse

- The older adults were not aware of community heat shelters and it were not attractive for the older adults

“I really don’t know (there are heat shelters nearby), even though I have been living here for a long time.”

-Women, aged 65, Tai Wo

*“Under the extremely hot weather, I believe no one goes to the heat shelter. Elderly people don’t prefer to go there to rest because **there is nothing inside.**”*

-Women, NGO worker



New services that could be implemented

- Service providers generally agreed that as compared to services targeting at the cold weather, there were **sparse services targeting at the hot weather**
- Solutions that **without additional manpower and financial resources** are urgently warranted

“Since last year, we have been planning some [pool activities](#) for our clients in the community swimming pools – it was fun for cooling.”

-Women, DECC worker

“We would notify the members through [WhatsApp](#), which is widely used nowadays, about 60% of the members are covered and they are used to receive our message. This could serve as an [alarm system for heatwaves](#) in the future.”

-Women, DECC worker

Discussion

- Older adults felt that summers are increasingly hot in recent years, but there has been little social discourse about the health impact of hot weather
- Despite that, older adults we interviewed were generally flexible and adapting to the increasingly hot weather with their own means
- Community facilities are important resources for older adults to adapt to hot weather conditions

Discussion

- Building design plays an important role in facilitating ventilation
- Indoor environments, especially their homes, are becoming increasingly important shelters from heat for older adults. More education or help are needed to make homes more adaptive to extreme heat, possibly without the increased use of AC
- Little was discussed on how to prepare the local community to become more aware and prepared for the future climate scenario

Thank You!
