

Deep Dive #2: Heat risk perception & raising awareness

June 6, 2023



SKIT: Do you think you're vulnerable?



Project commitment: Increasing Individual and Household Risk Perception

- **Part 1:** Conduct a study on public risk perception to determine individual strengths and barriers to heat action and identify behavior change strategies to expand action
- **Part 2:** Develop a public awareness raising campaign
 - in collaboration with local government officials and local media partners
 - include the door-to-door messaging by volunteers run during the heat season
 - include local customs and dynamics related to gender, language, age, and disability
 - include messages for small business community, to help reduce livelihood impacts



What is heat risk and why should we understand it?

Risk perception refers to: “people's beliefs, attitudes, judgments, and feelings toward risk, and incorporates the wider social and cultural values, as well as outlook, people adopt toward hazards”. Heat perceptions can be driven by structural, environmental, personal, or social factors.

Why should we understand risk perception?

Risk perception determines how people respond to risk. Understanding people's perception helps to facilitate targeted messaging



Studies on heat risk perception

Global review on heat risk perceptions between 2010 – 2020:

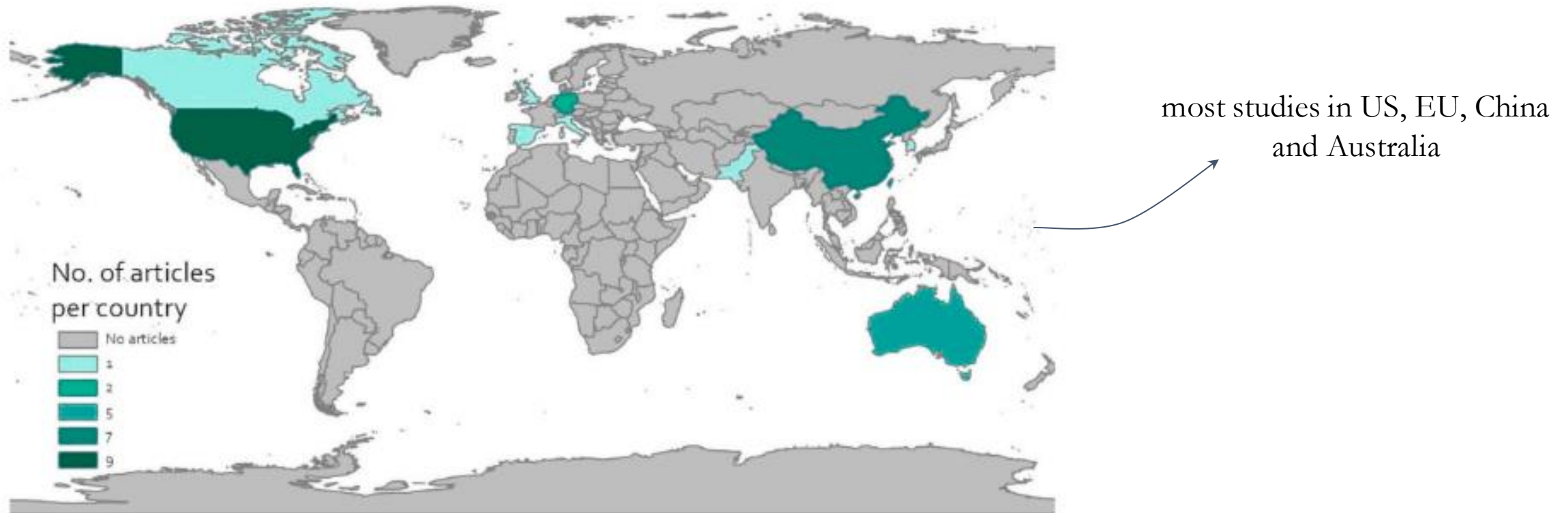


Fig. 1. Geographic distribution of study locations of heat perception articles in the scoping review.

Source: Hass et al., 2021

Studies on heat risk perception

In 2022, 8 new studies on risk perception were completed through research grant program:

- ❖ Knowledge, Attitudes, Practice & Risk Perceptions Regarding Heatwave Among Outdoor Workers in **Nepal**
- ❖ Evaluating of extreme heat risk among informal sector workers based on perception and micrometeorological field study, **India**
- ❖ Heat Risk Perception and Communication Strategies for Adaptation in Kampala City, **Uganda**
- ❖ Residents Perceptions of Extreme Heat in Beitbridge, **Zimbabwe**
- ❖ Heat Risk Perceptions among different occupational groups in South **India**
- ❖ Examining relationships between extreme heat and migration/ displacement and human mobility in Zacapa, **Guatemala**
- ❖ Climate Change Impacts on Occupational Health of Farmers and Forestry Workers in **Indonesia**
- ❖ Public Perception of the Health and Social Risks of Extreme Heat in Northern **Ghana**



Some findings...

People have different beliefs about causes of the heat, and if it will continue or get worse in the future.



Which do you think people responded...:

- A. People believed the **fumes from cars** caused the heat
- B. People believed the heat was caused by **the doings of God**
- C. People believed it was **urbanization**

Some findings...

People have different beliefs about causes of the heat, and if it will continue or get worse in the future.



“Though the weather has now become too hot, we are used to it, our problems are the diseases. The extreme heat is caused by our [bad] attitude.”

“I consider all of that as the doings of God. It is from God and not human, it is God who created us so He choose to do what He want to do.”

People discuss how the heat is affecting their health, livelihoods, water, environment and animals, and their social life.



Figure 2.6: Vendors protecting head from direct sun with scarves

“We are not able to visit others or go to churches or clubs. Our husbands do not go for soccer”

“At one time I developed a rash that I could not understand, only to be told at the clinic that it was all caused by heat.”

“You need to brave the heat in order to gain more customers”

Respondents viewed working in a high-risk environment as a **‘specialty to be proud of’**

The most vulnerable have limited options to adapt and adaptation behaviors are mostly driven by economic feasibility.

Barriers to adapt:

- High workload and competition
- No space (for fans)
- Economic restraints
- Limited shaded areas
- Limited access to water/electricity



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People have **different channels** they prefer to receive **information** (TV, radio, social media, from community/religious leaders, etc.).

Messages can be **different** depending on the target group.

- Residents had **limited knowledge of temperature levels** suggests a lack of use of weather forecasts, limiting their ability to prepare.
- Residents indicated to be **interested to receive information & guidance from the government**, as they are trusted as authority and role model.



In many countries, **policy makers still do not recognize heat as a threat, yet:**

1. The body of evidence is very clear: we know heat stress is increasing and causing a range of impacts
2. People are sometimes quite aware of heat risks and feel that it's negatively affecting their lives in various ways

“**The government seems to be ok with us burning [being exposed to heat] each year.** I think they have come to the conclusion that it's normal and ok for us to experience heat so much that they seem unmoved. **Yet we struggle each time** from August. In fact, no one has come here to talk about it. You [the research team] are the first to talk to us about this topic.”



Figure 1: Focus group discussion with elderly women

The Gap between Perception and Reality

Perceptions

My body is adapted to the heat!

We are not sure what the future will bring

Others might be at risk, but I'm not vulnerable

It's brave to work in the heat

I've always dealt with the heat



Reality

Heat stress is rising in nearly every region around the world

Some people are more vulnerable than they think

Heat has severe impacts

There are many ways to cope with the heat

Also chronic exposure to moderate heat can be impactful

With every further increment of climate change, heat will become deadlier and costlier



Common challenges in conducting surveys



Ethical approval can take a long time (up to 6 months or longer)

Difficulty requiring participants (especially works)

sometimes people could not participate because of pressure to work or inability to take breaks.

Power dynamics and cultural considerations

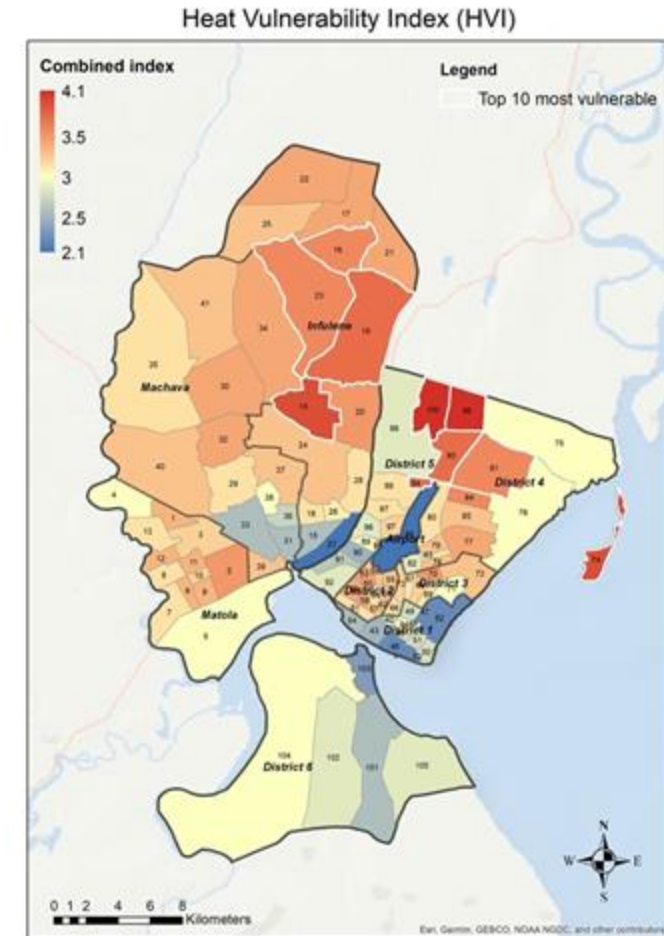
participants sometimes do not feel comfortable speaking freely (e.g. when a boss or person from the other gender was around) or criticize certain stakeholders.



Figure 4.7: Some vendors do not employ physical adaptive measures because erecting and removing them every day consumes a lot of time and energy.

Part 1: Design & conducting the study

Step 1: Hiring a consultant/researcher to lead the research and develop timeline



Example: heat vulnerability index across Maputo City as input for selecting vulnerable neighborhoods for risk perception study

Hiring a local consultant/researcher

When hiring a consultant/researcher, ensure the following qualifications:

- ❖ Master degree in environmental sciences, public health, or related field. A PhD a in similar field would be advantageous.
- ❖ Theoretical knowledge of climate change, heat risk and risk perception.
- ❖ Experience with qualitative methods and survey design, e.g. designing and implementing surveys, qualitative research methods, and analysing survey data, following ethical protocols, with proven fieldwork experience.
- ❖ Experience with community engagement and outreach and ability to collaborate with diverse stakeholders.
- ❖ Awareness of own positionality in working with vulnerable groups.
- ❖ Strong communication and organizational skills.
- ❖ Proficiency in the local language and in English.

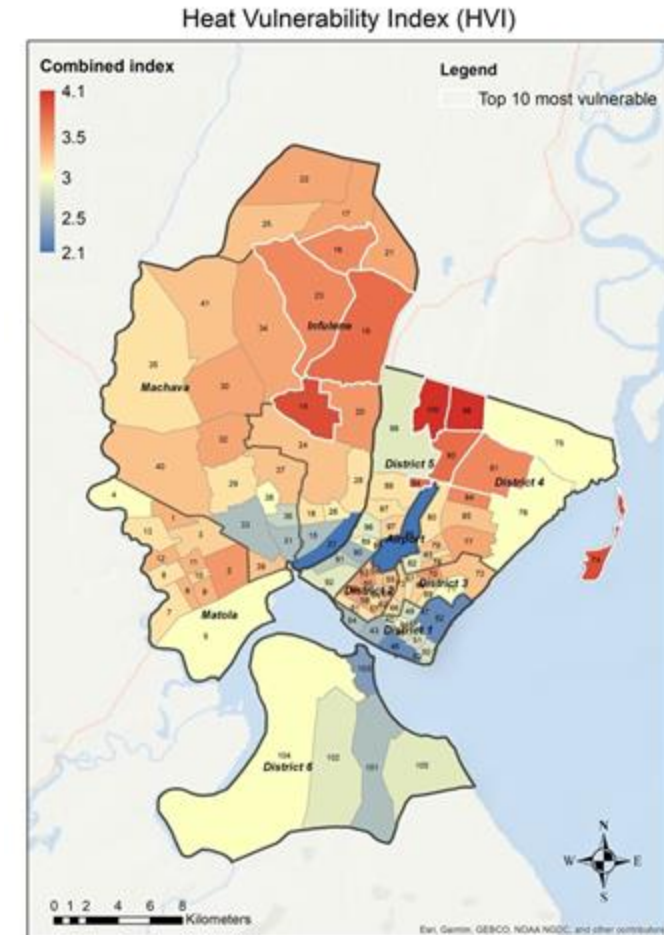


Part 1: Design & conducting the study

Step 1: Hiring a consultant/ researcher to lead the research and develop timeline

Step 2: Design of research methods

- Identify target population
 - inclusion and exclusion criteria
 - covering multiple groups



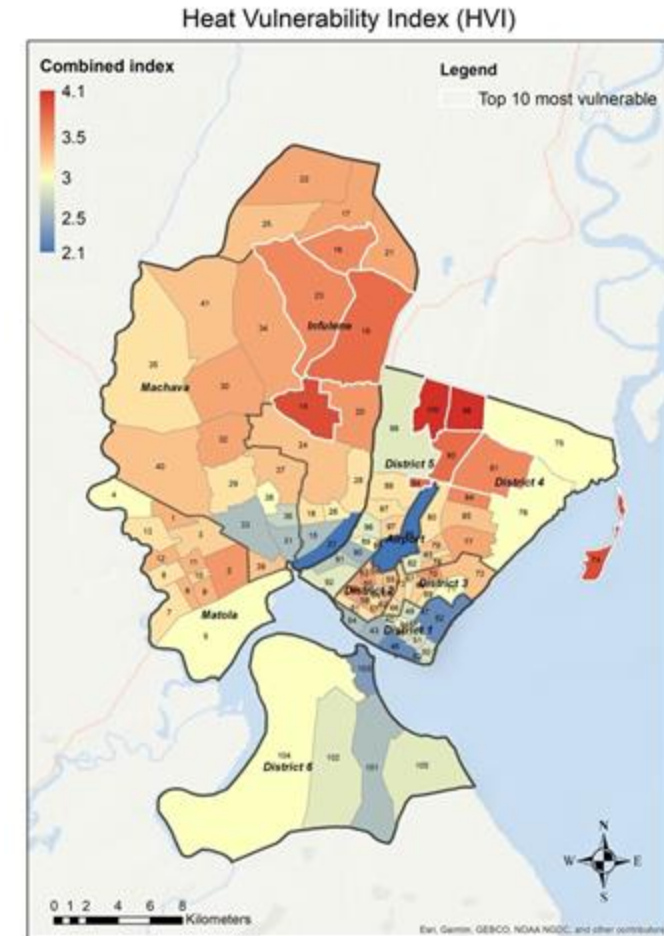
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- Ethical approval
- Timing of study



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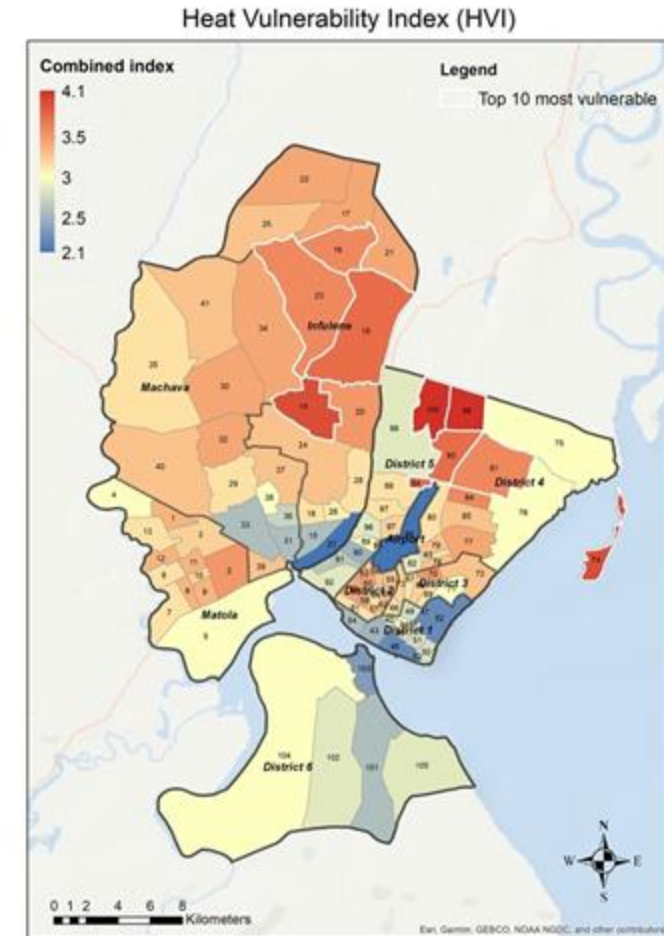
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Step 3: Training volunteers, pilot testing questions



Example: heat vulnerability index across Maputo City as input for selecting vulnerable neighborhoods for risk perception study

Important topics to cover in survey

1. Demographic information
2. Knowledge of heat and risks
3. Perception of impacts
4. Adaptation strategies and barriers
5. Information and communication channels

Part 2: Knowledge of extreme heat & impacts

14. Have you ever experienced periods of unusually or uncomfortably hot weather in this area?
- Yes
 No
15. If yes, how often do you experience periods of unusually or uncomfortably hot weather?
16. During which time of the day do you mostly experience discomfort from hot weather?
17. Have you experienced hot weather in the past years?
- Yes
 No
18. Do you know the temperature levels on hot days/nights?
- Yes
 No
19. Has there been an increase in temperature in the past years in your city?
- Yes
 No
 I don't know

Q&A

Part 2: Awareness-raising campaign

You have completed the risk perception study in your city and understand how different groups of people view heat. What next?



Connecting risk perception findings to messaging

- Development and testing of messages
- Through which channels should you send out messages? Which groups of people have particularly low perceptions of heat risk?
- What are some of the local customs and dynamics related to gender, language, age and disability that should be taken into account?
- What are some of the important vulnerable groups and sectors which awareness messages could target in your city? (e.g. small business community)
- With which partners should you collaborate (e.g. local government, media)

Which message would you choose?

Message A

"Are you over 65 years old? It's harder to adjust to heat at older age, even if you don't feel like the heat is affecting you. Protect yourself by drinking water even if not thirsty, avoid alcohol and caffeine, and contact friends and family."

Message B

"Heatwaves are a serious health threat. It's crucial to understand the risks and take preventive measures. Stay informed and follow local heat advisories"

Which message would you choose?

Message A

"Are you over 65 years old? It's harder to adjust to heat at older age, even if you don't feel like the heat is affecting you. Protect yourself by drinking water even if not thirsty, avoid alcohol and caffeine, and contact friends and family."

Targeted messages will more likely result in increased self-protective actions from target group

Message B

"Heatwaves are a serious health threat. It's crucial to understand the risks and take preventive measures. Stay informed and follow local heat advisories"

People often ignore blanket messages as they don't feel it's targeted to them

Which message would you choose?

Message A

"Have you or someone you know ever felt dizzy, nauseous, or extremely tired from the heat? These are all symptoms of heat illness. Avoid strenuous activities during the hottest times of the day and make sure to drink extra water during heat warnings!"

Message B

“Heatwaves are a serious health threat. Symptoms from heat include: dizziness, headache, skin rashes, and fatigue. Take action to stay cool and stay safe”



Which message would you choose?

Message A

"Have you or someone you know ever felt dizzy, nauseous, or extremely tired from the heat? These are all symptoms of heat illness. Avoid strenuous activities during the hottest times of the day and make sure to drink extra water during heat warnings!"

Both direct and indirect previous heat illness experiences have been shown to increase the perceived risk of heat

Message B

“Heatwaves are a serious health threat. Symptoms from heat include: dizziness, headache, skin rashes, and fatigue. Take action to stay cool and stay safe”



Which message would you choose?

Message A

“Afternoon heat is extremely dangerous, avoid outdoor exercise between 1:00 and 4:00pm”

Message B

"Avoiding exercise between 1:00 and 4:00pm has been shown to be extremely effective at reducing heat illness"

Which message would you choose?

Message A

“Afternoon heat is extremely dangerous, avoid outdoor exercise between 1:00 and 4:00pm”

Message B

"Avoiding exercise between 1:00 and 4:00pm has been shown to be extremely effective at reducing heat illness"

Perceived self-efficacy has been consistently shown to increase self-protective behavior

Next to textual, visual or voice messages can be helpful for certain people

HOW CAN YOU #BEATTHEHEAT?

1. WATER



2. SHADE



TODOS ESTAMOS EN RIESGO POR LAS OLAS DE CALOR.



SIN EMBARGO, HAY PERSONAS CUYO RIESGO ES AUN MAYOR.

ALL HEATWAVES ARE NOW AFFECTED BY CLIMATE CHANGE



PREGNANT WOMEN MAY GO INTO LABOR EARLY



LACTATING WOMEN ARE MORE LIKELY TO BECOME DEHYDRATED



Case-study: Heat wave action in Nepalgunj City

National Level Lessons Learnt/Experience Workshop

17th August 2022, Kathmandu



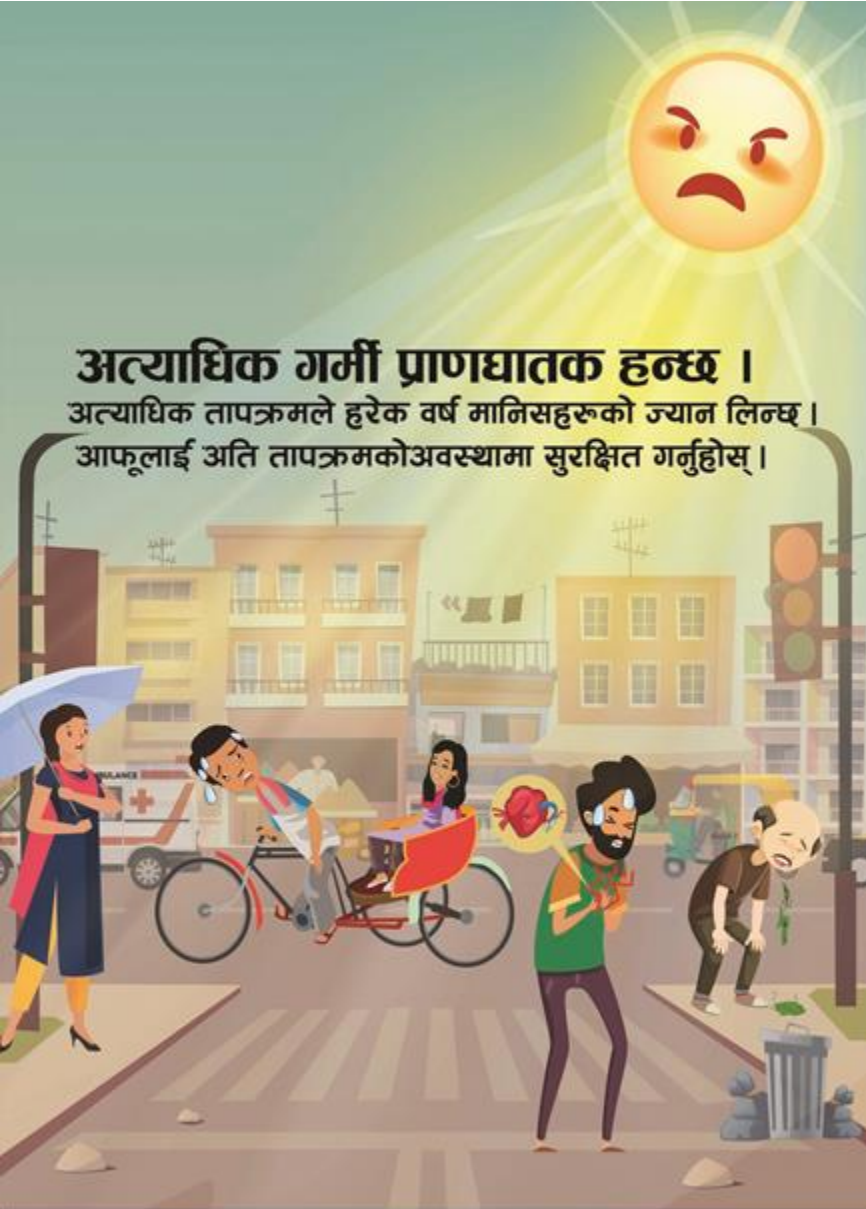


Miking and Pamphlets distribution



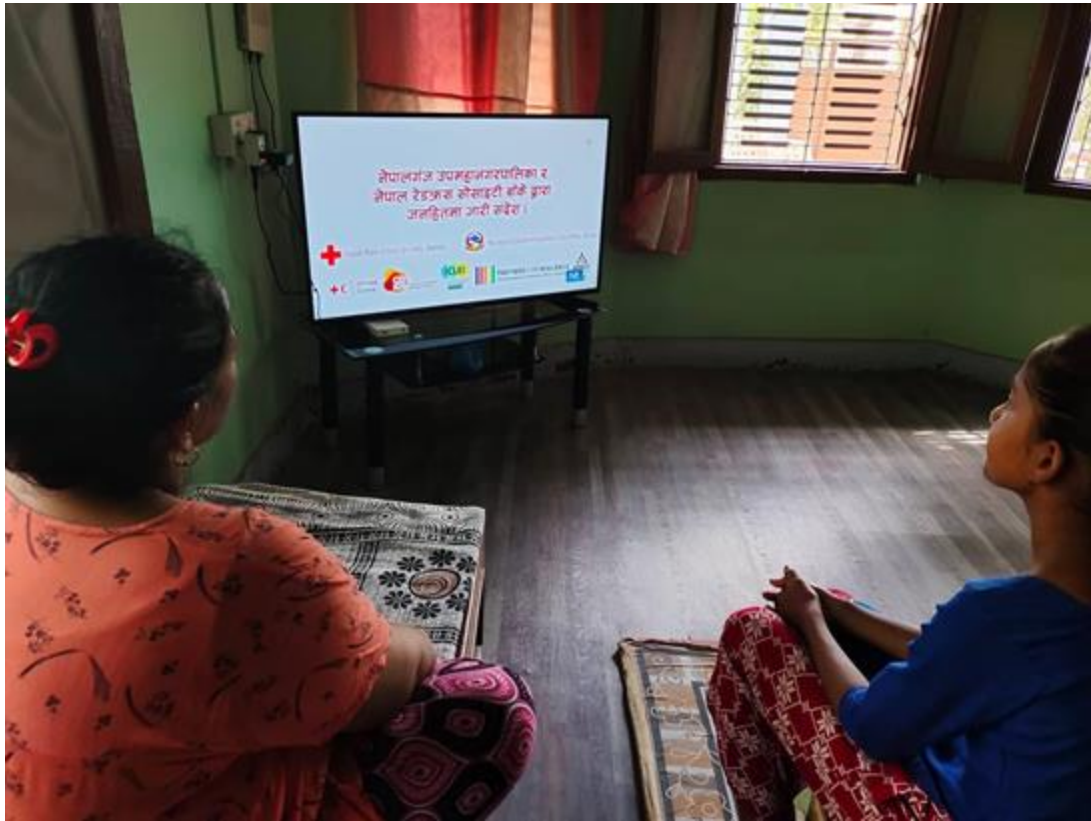
Heat wave awareness pamphlets print and distribution

Heat wave awareness posters





Heat wave awareness posters printing and putting them in strategic locations




Heat awareness video on the local TV channel Zee Nepal 4K



Social media boosting (through Facebook)



Lessons learned

- 
- Distributing pamphlets, posters and miking was effective
 - Conduct such heat awareness campaigns massively at school level mobilizing JYRCS (Junior Youth Red Cross Society)
 - Disseminate key heat awareness messages through cinema hall (QFX) in every show
 - Join as a key stakeholders to Armed Police Force (APF) and Nepal Police
 - Heat early notification is must through the government mechanism
 - Necessary to employ an enumerator at the hospital for collection heat health related data

Q&A

Optional: discussion questions

- Take a look at the workshop guide. Start mapping your plan and timeline.
- Have you already identified a university partner? And media partners?
- What are some of the important vulnerable groups and sectors which awareness messages could target in your city?
- Through which channels do you think people would preferably receive messages?
- What are some of the local customs and dynamics related to gender, language, age and disability that should be taken into account when researching risk perceptions?

