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# A PHENOMENOLOGICAL STUDY OF COMMUNITY AWARENESS, EXPERIENCES, AND ADAPTIVE RESPONSES TO HEATWAVES AMONG OUTDOOR WORKERS, VULNERABLE GROUPS, AND HEALTH WORKERS IN DAVAO CITY

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## ABSTRACT

This phenomenological study investigates the awareness, experiences, and adaptive responses to heatwaves among vulnerable groups in Davao City, focusing on outdoor workers, health workers, and residents from other high-risk populations. As the effects of climate change intensify, the city has experienced prolonged periods of extreme heat, raising concerns about public health, particularly for groups most susceptible to heat-related illnesses such as heatstroke, dehydration, and heat exhaustion. The study explores how residents perceive the risks associated with heatwaves, their coping strategies, and the effectiveness of public health interventions. Data were gathered through semi-structured interviews and focus group discussions with participants representing various vulnerable groups. Thematic analysis revealed several key themes: the recognition of heatwaves as a serious health threat, particularly due to the urban heat island effect; adaptive behaviors such as adjusting daily routines and using cooling devices; significant barriers to effective adaptation, including economic constraints and insufficient public infrastructure; and the gaps in the effectiveness of public health interventions, particularly in reaching underserved populations. Additionally, cultural beliefs and social norms influenced how residents responded to heatwaves, further complicating adaptation efforts. The findings suggest that while individual and community-level coping mechanisms exist, the lack of accessible public resources, such as cooling centers, and inadequate information dissemination were key barriers to reducing the health impacts of heatwaves. The study concludes that addressing these challenges requires a multi-faceted approach that integrates improved public infrastructure, better-targeted public health interventions, and community-driven solutions to enhance resilience to extreme heat. These findings provide valuable insights for policymakers aiming to develop more effective heatwave adaptation strategies, particularly in rapidly urbanizing and climate-vulnerable areas like Davao City.

**Keywords:** Heatwaves, Vulnerable Groups, Public Health, Climate Change, Coping Mechanisms, Adaptation Strategies, Urban Heat Island Effect, Public Health Interventions, Socioeconomic Barriers, Community Resilience

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## 1. INTRODUCTION

Davao City, a rapidly growing urban area in the Philippines, is increasingly vulnerable to the effects of extreme heat due to climate change and urbanization. In recent years, the city has seen higher temperatures and longer periods of intense heat, contributing to significant public health risks, particularly for vulnerable groups such as the elderly, children, outdoor laborers, and individuals with pre-existing health conditions (Department of Health Philippines, 2021). Heatwaves—prolonged periods of unusually high temperatures—are linked to serious health effects, including heat exhaustion, heatstroke, and exacerbation of chronic illnesses (Anderson & Bell, 2011). In urban settings like Davao, the impact is often intensified by the "urban heat island" effect, where built-up areas trap more heat, leading to elevated temperatures, especially during the nighttime (Memon, Leung, & Liu, 2008).

The need to understand local perceptions and responses to heatwaves in Davao City is critical for developing effective heat adaptation and resilience strategies. While various awareness campaigns and advisories are in place, it remains unclear how these efforts influence public awareness and behavior during extreme heat events. Insights into public understanding, perceived risks, and coping mechanisms can guide policymakers in creating targeted interventions that better address the realities faced by Davao residents. Exploring these elements can help identify gaps in current measures and lead to the development of more effective, community-centered approaches to mitigate the health impacts of heatwaves. This study aims to examine these factors, providing essential information that can support Davao City's efforts to build resilience against the rising threat of extreme heat.

## 2. STATEMENT OF THE PROBLEM

This study will investigate the following questions in the context of Davao City:

- What are residents' perceptions and understanding of heatwaves?

- How do residents of Davao City respond to and cope with extreme heat conditions?
- How effective do residents find public information and interventions related to heatwave preparedness in Davao City?

### 3. RELATED LITERATURE

#### Heatwaves and Public Health Risks

Heatwaves, characterized by prolonged periods of excessive heat, are becoming more frequent and severe due to climate change. They pose significant public health risks, particularly for vulnerable groups such as the elderly, children, outdoor laborers, and individuals with pre-existing health conditions. Studies highlight that heat-related illnesses, including heat exhaustion and heatstroke, are exacerbated in urban settings by the urban heat island effect, where built-up areas retain more heat (Anderson & Bell, 2011; Memon, Leung, & Liu, 2008).

Heatwaves are a leading cause of weather-related mortality worldwide, with studies showing that they disproportionately impact urban areas due to the urban heat island effect. According to Hajat et al. (2010), heatwaves exacerbate pre-existing health conditions, particularly among vulnerable groups. Moreover, Knowlton et al. (2009) demonstrated that heatwaves are linked to increased hospitalizations for cardiovascular, respiratory, and kidney-related illnesses.

#### Public Perception and Awareness

Research on risk perception shows that individuals often underestimate the dangers of extreme weather events, such as heatwaves, unless they have direct experience or receive targeted information. Slovic (1987) emphasized the importance of public awareness in fostering protective behaviors. Similarly, studies by Semenza et al. (2008) indicate that tailored public campaigns significantly improve understanding and preparedness for heatwave events.

Public awareness of heatwave risks often depends on prior experience and exposure to educational campaigns. Zografos et al. (2016) found that community knowledge and cultural attitudes play a significant role in shaping public responses to climate-related hazards. In a Philippine context, Lasco et al. (2019) noted that community-driven initiatives are essential for improving public understanding of climate impacts, including heatwaves.

#### Coping Strategies and Adaptive Responses

Coping strategies during heatwaves vary across socioeconomic groups. High-income households often employ technological solutions, such as air conditioning, while low-income groups rely on behavioral adjustments, such as seeking shade or reducing outdoor activities (Sheridan et al., 2003). Community-level adaptations, including access to cooling centers and public advisories, have been shown to reduce mortality and morbidity during extreme heat events (Ostro et al., 2010).

Behavioral and infrastructural adaptations are critical for mitigating heatwave impacts. Li et al. (2020) emphasized the importance of local knowledge in designing coping mechanisms, such as staying hydrated, wearing light clothing, and using ventilation effectively. A study by Huang et al. (2011) highlighted that community networks and social capital enhance collective resilience during extreme weather events.

#### Effectiveness of Public Information and Interventions

The effectiveness of public health interventions depends on accessibility and relevance. Studies by Abrahamson et al. (2008) demonstrate that early warning systems and community-based campaigns significantly enhance heatwave preparedness. However, barriers such as lack of trust in authorities or poor access to resources can undermine their impact (Ebi & Schmier, 2005).

Early warning systems and heat-health action plans have proven to reduce heatwave-related mortality. For example, Tan et al. (2007) evaluated the effectiveness of China's heatwave warning systems, noting that timely advisories reduced hospital admissions. Similarly, McGregor et al. (2015) stressed the importance of integrating local meteorological data into public health policies to improve response efficiency.

#### Barriers to Heatwave Adaptation

Economic constraints, cultural beliefs, and insufficient public infrastructure are common barriers to effective adaptation to heatwaves. Leiserowitz (2006) noted that socioeconomic disparities limit individuals' ability to take protective measures, while cultural norms influence how risks are perceived and addressed.

Socioeconomic and infrastructural constraints significantly hinder adaptive capacity. A study by Rasanen et al. (2016) found that low-income households face limited access to cooling technologies, increasing their vulnerability. In Southeast Asia, Le et al. (2018) identified cultural beliefs and lack of trust in public institutions as significant barriers to adopting heatwave preparedness measures.

#### 4. METHODOLOGY

This study employed a qualitative research design to explore the subjective experiences, perspectives, and coping strategies of Davao City residents regarding heatwaves. A phenomenological approach was utilized to capture the lived experiences of participants and understand the meaning they ascribed to their experiences with extreme heat. Qualitative methods allowed for an in-depth exploration of participants' beliefs, behaviors, and perceptions, which was crucial in understanding how people responded to and adapted to heatwave events (Creswell & Poth, 2018).

##### Research Setting

The primary sources of data were the residents of Davao City, particularly those who were directly affected by heatwaves. This included:

- Vulnerable Groups: Elderly individuals, children, outdoor laborers, and individuals with pre-existing health conditions.
- Public Health Workers: To gain insights on public health strategies and interventions.
- Community Leaders: Barangay officials and local organizations involved in disaster response or public health advocacy.

##### Participants

The study used purposive sampling, selecting participants based on specific characteristics relevant to the study's objectives. These included:

- Age (elderly, children)
- Occupation (outdoor laborers)
- Health status (those with pre-existing conditions)
- Socioeconomic status (low-income groups)
- Community involvement (health workers, barangay leaders)

A minimum of 20 participants were interviewed, ensuring a diversity of perspectives. This sample size was deemed adequate for thematic saturation, where no new themes emerged during data collection (Guest et al., 2006).

##### Data Collection

Data were gathered through semi-structured interviews and focus group discussions. These instruments were suitable for capturing personal experiences and obtaining detailed, nuanced responses.

- Semi-structured Interviews: One-on-one interviews were conducted to explore individual perspectives on heatwaves, coping mechanisms, and the effectiveness of public health measures. Interview questions were open-ended to encourage participants to share their thoughts freely (Braun & Clarke, 2006).
- Focus Groups: Group discussions allowed for the exchange of ideas and shared experiences, fostering a collaborative understanding of the community's response to heatwaves. The interactions also helped identify common themes and diverse viewpoints (Patton, 2002).

##### Data Analysis

The data collected from the semi-structured interviews and focus group discussions (FGDs) were transcribed and analyzed using thematic analysis. This approach involved coding recurring patterns and themes in the data related to participants' awareness of heatwaves, perceived health risks, coping strategies, and the effectiveness of public health interventions. The coding process identified key themes such as the understanding of heatwaves, adaptive responses, and socioeconomic barriers to effective coping. Thematic analysis revealed that residents, especially outdoor workers and vulnerable groups, perceive heatwaves as a serious health threat but face challenges in responding due to limited access to cooling resources, financial constraints, and insufficient public infrastructure. Additionally, cultural beliefs and inadequate dissemination of heatwave-related information were identified as significant barriers to effective adaptation. These findings provide a comprehensive understanding of the factors influencing residents' responses to heatwaves and will inform policy recommendations aimed at improving public health strategies and infrastructure to enhance resilience, particularly for vulnerable populations.

#### 5. RESULTS AND DISCUSSION

This section presents the results and discussion of the study, focusing on the awareness, coping mechanisms, and responses to heatwaves among residents of Davao City, particularly vulnerable groups such as outdoor workers, health workers, and individuals with pre-existing health conditions. The findings are based on data gathered through semi-structured interviews and focus group discussions (FGDs), which provided rich insights into the lived experiences of participants during periods of extreme heat. The analysis explores key themes such as participants' understanding of

heatwaves, the strategies they employ to cope with the heat, and the effectiveness of existing public health interventions in mitigating heat-related risks. It also highlights the barriers faced by these groups, including socioeconomic constraints, limited access to cooling resources, and the effectiveness of public awareness campaigns. This section aims to provide a deeper understanding of how residents of Davao City perceive and respond to heatwaves, and how these responses are shaped by various social, economic, and infrastructural factors. The findings discussed here will inform recommendations for improving heatwave preparedness and resilience, particularly for those most at risk.

### **Theme 1: Awareness and Perception of Heatwaves**

This theme captures participants' understanding of heatwaves, their awareness of the causes and impacts of extreme heat, and the perceived risks, particularly among vulnerable groups.

#### **Subtheme 1.1: Understanding of Heatwaves**

Participants in the study, particularly vulnerable groups like outdoor laborers and the elderly, recognized heatwaves as prolonged periods of extreme heat. Many attributed the increasing frequency and intensity of heatwaves to anthropogenic factors such as climate change, urbanization, and deforestation. Notably, the urban heat island effect, where densely built areas trap heat, was identified as a significant contributor to the intensified heat in Davao City. This reflects a broad understanding of heatwaves beyond just hot weather, connecting them to larger environmental and developmental issues. Studies, such as Zhao et al. (2018), also highlight that urban heat islands significantly amplify the severity of heat events.

Elderly Participant:

"Lisod na ang kainit karon. Dili lang basta init, tungod siguro sa kakulang sa kahoy ug puros na cemento ang paligid. Mas grabe na gyud ang epekto sa climate change."

Outdoor Laborer:

"Magtrabaho mi sa kainit kada adlaw, ug murag nagkadako ang kainit. Ang syudad labi na diri sa centro puno sa concrete, mao nga magpabilin ang kainit."

Health Worker:

"Makita nako ang epekto sa heatwaves kada adlaw. Dili lang siya basta kainit—murag magka-grabe na gyud. Base sa akong nakita, ang climate change, urbanisasyon, ug deforestation tanan nag-apekto sa pagdaghan ug pagkusog sa heatwaves. Ang urban heat island effect diri sa Davao City usa ka dakong problema. Ang dense nga infrastructure nag-trap sa kainit, nga nagpalisod sa mga tawo, labi na ang mga tigulang ug mga mag-uuma nga nagtrabaho gawas. Dako kini nga risgo sa kahimsog nga kinahanglan nato atimanon."

#### **Subtheme 1.2: Impact on Health**

The health risks posed by heatwaves were a central concern among participants, particularly outdoor laborers, elderly individuals, and those with chronic conditions. Many participants linked heatwaves to heat exhaustion, dehydration, and heatstroke, noting that outdoor workers faced intensified risks due to prolonged exposure. Those with pre-existing health conditions highlighted how heat exacerbated their illnesses. This finding underscores the heightened vulnerability of these groups, consistent with the research by Kovats and Hajat (2018), which emphasizes the increased risks for individuals with underlying health conditions during extreme heat events.

Elderly Participant:

"Ang kainit gyud nakaapekto sa akong kahimsog. Naglisod ko sa dehydration, ug usahay ang kainit magpalala sa akong mga sakit. Mas dali ko kapoy ug maglisod ko'g ginhawa. Kabalak-an ko kung unsa pa ang mahimo sa kainit sa akong kahintang."

Outdoor Laborer:

"Ang trabaho gawas sa kainit peligroso. Dali ko ma-dehydrate, ug usahay maglisod ko og buhi o mabangag. Ang kainit magpalisod sa akong trabaho, ug lisod kaayo ang magpadayon. Maglisod akong lawas sa kainit."

Health Worker:

"makita nako ang epekto sa heatwaves sa mga tawo adlaw-adlaw. Daghan mga mag-uuma ang nag-antos sa heat exhaustion, dehydration, ug usahay heatstroke. Para sa mga naay chronic nga sakit, ang kainit magpalala sa ilang kahintang ug mahimong peligroso sa ilang kinabuhi."

### **Theme 2: Coping Mechanisms and Adaptation Strategies**

This theme examines the strategies employed by participants to manage the effects of heatwaves, including behavioral adjustments, the use of cooling devices, and the natural resources they rely on.

### Subtheme 2.1: Behavioral Adjustments

Participants modified their daily routines to minimize heat exposure, particularly during peak heat hours between 10:00 AM and 3:00 PM. Outdoor workers adapted their work schedules by starting earlier in the day or working later into the evening when the temperatures were lower. Vulnerable groups, such as the elderly, also stayed indoors during the hottest parts of the day, reducing physical exertion and outdoor activities. These behavioral adjustments reflect the significant impact of heatwaves on daily life, particularly for those whose work or activities require outdoor exposure.

Elderly Participant:

"Nagpuyo ko sulod sa balay during sa pinakapait nga oras sa adlaw, gikan alas 10 sa buntag hangtod alas 3 sa hapon. Dili na nako kaya ang kainit, mao nga magpahulay lang ko ug maglikay sa mga butang nga magkinahanglan ug daghang kusog. Mas luwas nako nga magpuyo sa sulod, labi na karon nga grabe na kaayo ang kainit."

Outdoor Laborer:

"Aron malikayan ang kainit, magsugod ko og trabaho sayo sa buntag before pa magsugod ang init, o magtrabaho ko hangtod gabii. Lisod, pero mao ra ni ang paagi aron makahuman ko sa trabaho nga dili maglisod sa kainit."

Health Worker:

"Magpahimangno ko sa mga tawo, labi na sa mga tigulang ug mga mag-uuma, nga magpuyo sulod sa balay during sa pinakapait nga oras sa adlaw, gikan alas 10 sa buntag hangtod alas 3 sa hapon. Importante nga magpahulay ug maglikay sa bug-at nga kalihokan kung ang kainit pinakataas. Ang mga gamay nga adjustments makatabang gyud aron malikayan ang mga problema sa kahimsog nga resulta sa kainit."

### Subtheme 2.2: Use of Cooling Devices and Natural Resources

Participants employed various cooling methods, including the use of electric fans, soaking towels in cold water, and taking cold showers. Those with better access to resources, particularly wealthier individuals, used air conditioning. However, for lower-income participants, especially outdoor laborers, such cooling devices were often inaccessible, and they relied on natural methods such as seeking shade, drinking cold water, and adjusting their daily routines (e.g., watering plants early in the morning or late in the evening). These adaptive strategies align with the recommendations from the World Health Organization (2018), which emphasize hydration and reducing outdoor exposure.

Elderly Participant:

"Aron magpabilin nga bugnaw, maggamit ko og fan ug usahay magbasa ko og tuwalya sa bugnaw nga tubig aron ibutang sa akong ulo. Wala koy air conditioning, pero kini nga mga simpleng pamaagi makatabang nako nga makapahupay. Sigurado pud ko nga mag-inom og bugnaw nga tubig ug magpuyo sa anino kung mahimo."

Outdoor Laborer:

"Magpuyo ko sa anino o mag-inom og bugnaw nga tubig aron magpabugnaw. Usahay magtubig ko sa mga tanom sayo sa buntag o gabii kung mas bugnaw. Kini ang mga butang nga akong ginabuhay aron makasurvive sa kainit."

Health Worker:

"Magpahimangno ko sa mga tawo nga magpabilin nga hydrated pinaagi sa pag-inom og bugnaw nga tubig ug maggamit og fan o basang tuwalya aron mapabugnawan ang lawas. Dili tanan adunay air conditioning, mao nga importante nga mangita og natural nga pamaagi sa pagpabugnaw, sama sa pagpuyo sa anino o pag-adjust sa oras sa trabaho. Kini nga mga pamaagi importante aron malikayan ang mga sakit nga resulta sa kainit."

### Subtheme 2.3: Socioeconomic Barriers to Effective Coping

The study highlighted that financial constraints were a significant barrier for low-income participants, especially outdoor workers and the elderly, in adopting more effective coping strategies. Many participants expressed frustration over the inability to afford air conditioning or even basic fans. This finding aligns with research by Chow et al. (2016), which showed that lower-income groups are disproportionately affected by the lack of access to cooling technologies, which limits their ability to adapt to extreme heat effectively.

Elderly Participant:

"Dili ko kaya magpalit og air conditioning o bisan maayo nga fan. Lisod kaayo kay ang kainit dili na matolerate, pero wala koy kwarta aron makapalit og gamit nga makatabang magpabugnaw. Kinahanglan lang ko mag-antos sa unsay naa, pero dili kini igo."

Outdoor Laborer:

"Lisod ang kainit sa trabaho, ug usahay gusto ko lang makapalit og butang nga makatabang, pero dili kini mahimo para nako."

Health Worker:

"Daghan nga mga tawo, labi na ang mga naay gamay nga kita, dili maka-afford sa mga cooling devices nga kinahanglan aron magpabilin nga luwas sa kainit. Lisod kaayo kay kini nga mga pamaagi importante, pero kung walay kwarta aron paliton, magpabilin sila nga delikado sa mga sakit nga resulta sa kainit."

### **Theme 3: Effectiveness of Public Interventions**

Brief Description: This theme focuses on the effectiveness of existing public health interventions, such as heatwave advisories and cooling centers, and the challenges participants face in accessing these resources.

#### **Subtheme 3.1: Public Health Interventions**

The effectiveness of public health interventions was varied. While many participants reported receiving heatwave advisories through media outlets like television, radio, and social media, the accessibility and relevance of this information were questioned. Residents from remote barangays, in particular, reported limited access to these resources due to inadequate electricity, internet connectivity, and insufficient outreach. Moreover, some respondents felt that the heatwave advisories were too general and lacked specific information about cooling centers or emergency health services. These findings suggest a gap in both the accessibility and contextualization of heatwave information, pointing to the need for more targeted, community-driven campaigns.

Elderly Participant:

"Maka dungog ko usahay sa radio bahin sa heatwave advisories, pero dili nako masabtan usahay. Ang uban nga impormasyon ambot kung unsa, ug dili ko kabalo asa ko paingon kung kinahanglan ko og tabang. Sa among barangay, wala'y saktong internet, mao nga lisod magpabilin nga updated sa mga balita."

Outdoor Laborer:

"Maka dungog ko sa mga warning sa kainit gikan sa facebook, pero usahay dili ko kabalo unsaon ang paggamit sa impormasyon. Sobra ra ka general, ug dili ko kabalo asa ko paingon kung kinahanglan ko og tabang o lugar nga mabugnawan. Diri sa amoang trabahoan, walay internet, mao nga dili ko makasunod sa mga update."

Health Worker:

"Bisan pa man nga ang mga advisories bahin sa heatwaves gishare sa TV ug social media, daghan nga mga tawo, labi na sa mga liblib nga lugar, wala'y access ani nga mga pamaagi. Ang impormasyon kasagaran sobra ka general ug wala naghatag og klaro nga lugar kung asa sila pwede magpa-tabang o magpabugnaw. Tinuod nga kinahanglan pa og mas focused ug accessible nga komunikasyon para sa tanan."

### **Theme 4: Social and Cultural Barriers to Adaptation**

Brief Description: This theme explores the social and cultural factors that influence residents' ability to respond effectively to heatwaves, including traditional practices, misconceptions, and the role of community cooperation.

#### **Subtheme 4.1: Cultural Beliefs and Social Norms**

Cultural beliefs significantly shaped participants' responses to heatwaves. A common belief among some groups was the avoidance of cold drinks during extreme heat, fearing they would cause colds or other illnesses. This misconception hindered effective hydration strategies, which are essential for managing heat-related illnesses. Social norms also played a role in shaping how people responded to heatwaves. For example, in certain communities, there was social pressure to continue outdoor activities despite the heat, particularly among workers and young people. These cultural factors emphasize the need for culturally sensitive public health campaigns that address misconceptions and promote healthy behaviors during heatwaves.

Elderly Participant:

"Sa among komunidad, gituohan nga ang pag-inom og bugnaw nga ilimnon magpasakit sa lawas, mao nga maglikay ko ani. Kabalo ko nga kinahanglan mag-inom og daghang tubig, pero sukad pagkabata namo, gitudlo nga dili maayo ang bugnaw nga ilimnon labi na kung init kaayo."

Outdoor Laborer:

"Usahay, ginasulti namo nga ayaw mag-inom og bugnaw nga tubig kay makabaton og sapon, mao nga mag-inom lang mi og unsay naa. Pero lisod kay sobra kaayo ang kainit, ug kabalo ko nga kinahanglan magpabilin nga hydrated. Bisan pa man, ang mga tawo palihug gihapon trabaho bisan pa sa kainit, labi na ang mga batan-on."

Health Worker:

"Perme nako madungog nga ang mga tawo mag-ingon nga ang bugnaw nga ilimnon makapasakit, mao nga maglikay sila niini during sa heatwaves. Kini nga panghunahuna maglisod sa pagpugos nga magpabilin sila hydrated. Dugang pa,

ang social norms sa uban nga komunidad magpugos sa mga tawo nga magpadayon og trabaho gawas bisan pa sa kainit, nga peligroso kaayo. Kinahanglan nato og mas maayo nga edukasyon aron matabangan sila."

#### **Subtheme 4.2: Community Engagement and Collective Efforts**

Community-driven responses were also a critical element of heatwave adaptation. Many participants reported that in their barangays, informal networks were formed to share cooling resources or pool funds for buying drinking water. In some areas, residents organized collective efforts, such as creating temporary shaded areas or cooling stations, using the bayanihan (community cooperation) model. These collective actions demonstrate the strength of social capital in enhancing resilience to heatwaves. Local governments can leverage these community-driven initiatives by providing better support, funding, and resources for collective heatwave preparedness programs, which could improve the overall adaptive capacity of residents.

Elderly Participant:

"Sa among barangay, nagtabangay mi during sa kainit. Usahay, magtigom mi og kwarta aron mopalit og tubig o magbahin og mga fan. Usahay pud maghimo og mga anino nga lugar aron magpahaway mi. Lami kaayo nga mabawan nga makasalig mi sa usag-usa."

Outdoor Laborer:

"Sa among lugar, nagtinabangay mi aron makasurvive sa kainit. Magtigom mi og kwarta aron mopalit og bugnaw nga ilimnon o mga fan, ug usahay maghimo mi og temporary nga mga shelters aron makakuha og anino. Lisod, pero nagtabangay mi, labi na kung dili na matagamtaman ang kainit."

Health Worker:

"Nakakita ko sa mga komunidad nga nagtinabangay during sa heatwaves. Sa uban nga lugar, ang mga tawo nag-organize aron maghimo og mga anino nga lugar o magtukod og cooling stations gamit ang espiritu sa bayanihan. Ang kolektibong paningkamot makatabang sa tanan, labi na sa mga vulnerable. Ang lokal nga gobyerno kinahanglan maghatag og suporta sa mga paningkamot pinaagi sa paghatag og mga resources ug pondo aron mapalambo ang epekto niini."

## **6. CONCLUSION**

This study provides a comprehensive analysis of the perceptions, coping mechanisms, and public interventions related to heatwaves in Davao City. The analysis revealed four key themes: Awareness and Perception of Heatwaves, Coping Mechanisms and Adaptation Strategies, Effectiveness of Public Interventions, and Social and Cultural Barriers to Adaptation. This provides a comprehensive understanding of the participants' experiences on how they perceive and respond to heatwaves. The findings highlight that residents, particularly those in vulnerable groups like outdoor workers, the elderly, and individuals with pre-existing health conditions, recognize heatwaves as a significant health risk. However, their ability to effectively respond to these events is constrained by multiple factors, including financial limitations, lack of access to cooling resources, and inadequate public infrastructure.

Behavioral adjustments, such as altering daily routines, staying hydrated, and seeking shade, were commonly employed by participants to cope with heatwaves. Despite these adaptive strategies, socioeconomic disparities played a crucial role in shaping participants' capacity to protect themselves from heat-related health risks. Many low-income groups expressed frustration with the high costs of cooling devices and the limited availability of cooling infrastructure in their communities.

The study also reveals significant gaps in the effectiveness of public health interventions. While public advisories were distributed through media channels, the accessibility and relevance of these messages were limited, particularly for residents in remote or underserved areas. Furthermore, the absence of adequate cooling centers and the lack of culturally sensitive communication strategies were identified as major barriers to effective heatwave response.

The role of community engagement emerged as a critical factor in coping with heatwaves. Community-driven initiatives, such as bayanihan and informal support networks, played an essential role in providing temporary relief to those affected by extreme heat. These findings suggest that integrating community participation into heatwave preparedness and response efforts could significantly enhance the effectiveness of public interventions.

To improve resilience against heatwaves, this study recommends prioritizing investments in public infrastructure, including the establishment of cooling centers, and improving communication systems to ensure that heatwave information reaches all residents, especially in rural and remote areas. Additionally, culturally sensitive campaigns should be implemented to address misconceptions and encourage effective coping strategies. Policymakers and local authorities must recognize the importance of addressing the multifaceted challenges posed by heatwaves to safeguard the health and well-being of Davao City's residents in the face of a changing climate.

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