Navigating the dilemma between social realities and public health: Health beliefs and COVID-19 protocol non-adherence among fishers in Winneba, Ghana

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ABSTRACT

Globally, the fisheries sector was identified as one of the most vulnerable to the socio-economic impacts of the COVID-19 pandemic, with several countries imposing complete shutdowns. In Ghana, however, the government did not include a total closure of the fishing sector as part of its COVID-19 interventions. Despite awareness of the disease and associated preventive protocols, many fishers in coastal communities in the Central Region, particularly in Winneba, exhibited low adherence. This study sought to identify and explain the cognitive and contextual factors influencing this non-adherence. Guided by the Health Belief Model (HBM) and adopting a qualitative case study approach, the research draws on data collected through interviews with three chief fishermen, three focus group discussions, and observations from transect walks in three fishing communities in Winneba. A thematic analysis of the data reveals that the socio-economic conditions, communal lifestyle, and occupational realities of the fishers serve as significant barriers to the adoption of the preventive behaviours. Moreover, local fishers largely perceived COVID-19 as a distant, dangerous disease that had little relevance to their daily lives. These perceptions were reinforced by health communication cues that lack local relevance or evidential resonance. The study concludes that the fishers' low risk perception, in conjunction with economic and social barriers, leads to their non-adherence to COVID-19 protocols. Without locally grounded, context-specific messaging that reflects the realities of these communities, health communication interventions are unlikely to bring about meaningful behavioural change. The study therefore recommends that health interventions in coastal and, by extension, rural communities should be informed by a communication-based assessment that addresses the unique challenges of the targeted communities and audiences.

Keywords: COVID-19, Fishers, Ghana, Health Belief Model, Preventive Protocols, Non-Adherence, Winneba

I. INTRODUCTION

Health communication involves the development and dissemination of messages that promote healthy interventions and inform target populations about health risks and preventive measures, and it is crucial for the effective implementation of health interventions. It is tailoring the information and the way in which it is delivered for different types of audiences. For health campaigns to be practical and effective, social, cultural, economic, and even certain irrational aspects of the community must be well understood (Harrington, 2015). Ignoring these factors may result in the health messages losing their target and generating misunderstanding, indifference, and non-compliance with the health advice offered. The effectiveness of health communication can be enhanced by addressing these gaps, which in turn may help improve the population's health status.

The COVID-19 pandemic presented the world with an unprecedented health crisis that required urgent, collective behavioural responses and comprehensive health communication strategies. Since its emergence in Wuhan, China, the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), which causes COVID-19, has spread rapidly across the globe and was declared a pandemic. The initial global advice on COVID-19 from the World Health Organisation's [WHO] International Health Regulations (IHR) was given on January 23, 2020. In its statement, the organisation stated that, "all countries should be prepared for containment, including active surveillance, early detection, isolation and case management, contact tracing and prevention of onward spread of 2019-nCoV infection, and to share full data with WHO" (Zhang et al., 2020, p. 2). COVID-19 was later declared a public health emergency by the WHO on January 30, 2020 (Zhang et al., 2020) and subsequently declared as a pandemic on March 11, 2020 (WHO, 2020).

In response to this global call, governments and health institutions worldwide instituted a range of public health measures aimed at curtailing the spread of the virus. These included promoting preventive behaviours such as hand hygiene, the wearing of face masks, social distancing, and later, widespread vaccination campaigns. In Ghana, the first COVID-19 cases were confirmed on March 12, 2020, involving returning residents from Norway and Turkey. Before these confirmed cases, Ghanaians, being apprehensive about the spread of the virus, had mounted pressure on the

government to close Ghana's borders and institute measures to possibly avoid any incidence of COVID-19 (Sarpong & Obeng, 2020).

As a response to the confirmation of the initial cases, the Government of Ghana outlined a five-point strategic framework to guide the nation's fight against the pandemic. On April 5, 2020, the President of the Republic of Ghana, Nana Addo Dankwa Akufo-Addo, announced these objectives: (1) to limit and stop the importation of the virus; (2) to contain its spread; (3) to provide adequate care for the sick; (4) to limit the impact of the virus on social and economic life; and (5) to inspire the expansion of domestic capabilities and deepen national self-reliance (Zhang et al., 2020). To achieve these objectives, several stringent public health interventions were rolled out intermittently. These included contact tracing; restrictions on public gatherings such as conferences, religious events, funerals, and festivals; school and university closures (March 15, 2020); international travel bans (March 16, 2020); self-quarantine guidelines (March 19, 2020); closure of all entry ports and checkpoints (March 22, 2020); and partial lockdowns in the pandemic epicenters, Accra, Tema, Kasoa, and Kumasi (March 27, 2020).

These measures had major socioeconomic effects, even though they were necessary to protect public health. Businesses had to close, and activities in the informal sector had to stop, which caused unemployment to skyrocket (Benneth et al., 2020). These changes had a significant impact on the fishing industry, with the artisanal and small-scale fisheries sector being especially affected, even though it plays a central role in Ghana's economy and food security

The small-scale fishing industry supports about 32 million direct jobs around the world. In 2015, the industry in Ghana brought in about US$1 billion (Okyere et al., 2020). Moreover, it provides direct and indirect employment to around 10% of Ghana's population and remains the primary source of livelihood for many coastal dwellers. Ghana's coastline, home to about 186 fishing communities and nearly 300 landing beaches (Dovlo et al., 2016), depends heavily on artisanal fishing.

The mode of fishing in coastal Ghana is predominantly small-scale and typically labour-intensive and artisanal in nature. The method of fishing involves clustering of fishers, close human interaction and close contact at every stage, including casting of nets, drawing of nets, harvesting of fish while on board vessels, offloading fish from canoes to landing beaches, and processing and selling of fish at the fish markets (Okyere et al., 2020). These fishing practices present severe public health challenges during pandemics, particularly COVID-19, which spreads mainly through aerosolisation during person-to-person contact. Aside from this, the nature of the fishing practices makes it difficult for one to adhere to the COVID-19 protocols.

Drawing on research into the implications of COVID-19 for small-scale fisheries, Benneth et al. (2020) underscore that fishers, encompassing fishermen, processors, and traders, are particularly vulnerable to infection and act as potential vectors for community spread. As a result, fishing communities have been identified as potential hotspots for COVID-19 transmission. Consequently, fishing communities are regarded as potential epicentres for COVID-19 transmission.

Echoing this concern, Okyere et al. (2020) conducted a study to examine the extent of clustering and non-compliance at small-scale fishing landing beaches in the Central Region of Ghana. Inspired by the findings of studies such as Benneth et al. (2020) and Okyere et al. (2020), the researcher of this study undertook a series of transect walks (Mefalopulos, 2008) across the Winneba landing beach sites to observe firsthand the extent of non-adherence to COVID-19 protocols. The preliminary field observations revealed widespread non-compliance with safety protocols, particularly regarding physical distancing, hand hygiene, and the wearing of masks.

Even though Okyere et al. (2020) designated Winneba as a high-risk spot for COVID-19 spread, their study was conducted only at Eyipe, the main fishing community in Winneba. However, this study, per the transect walks, revealed that the phenomenon is pervasive in all the fishing communities in Winneba. Winneba has five landing beach sites, namely, i.e. Aboadze, Kesiwokan, Eyipe, Penchem, Akosua Village, and Woarabeba (Akutse & Samey, 2015). However, for the purposes of this study, Kesiwokan, Penche, and Eyipe were clustered under Eyipe due to their close proximity. Thus, the study was conducted in three fishing communities in Winneba, namely, Eyipe, Akosua Village, and Woarabeba.

Unlike prior studies (like Benneth et al., 2020 and Okyere et al., 2020) that focused primarily on physical clustering and spatial analysis, this research offers an in-depth understanding of fishers' behaviour from the cognitive and behavioural perspective through the theoretical lens of Health Belief Model (HBM). The HBM is a social cognitive model that offers some assumptions that explain why individuals engage, or fail to engage, in health-protective behaviours (Ajzen, 1998). Numerous studies (e.g., Carpenter, 2010; Renu et al., 2015) have demonstrated the effectiveness of HBM in shaping health communication interventions and bringing about behavioural change.

Focusing on artisanal fishers in Winneba, the study explores how their particular social and economic conditions shape health perceptions and decision-making. Guided by the Health Belief Model, it further interrogates the reasons behind their reluctance or inability to observe COVID-19 safety measures. The research focuses on how the six main parts of the model, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action, show up in the fishers' lives. By this, the study analyses how demographic and occupational contexts

influence COVID-19-related health behaviours and generate recommendations for culturally sensitive public health communication strategies tailored to small-scale fishing communities in Winneba. The core research question guiding this inquiry is: What cognitive and structural factors influence non-adherence to COVID-19 preventive protocols among fishers in the Winneba fishing communities?

Though Okyere et al.'s (2020) study focused only on the landing beach sites in the Central Region (i.e. Elmina, Winneba, Apam, Mumford, Biriwa and Cape Coast), they postulated that the "undesirable clustering at the landing beaches in the Central Region is akin to the situation at most of the nearly 300 coastal landing beaches in the country" (p. 7). Building on this assumption, the study ultimately seeks to generate insights that can guide the design of health communication strategies tailored to the specific context of Winneba and, by extension, other coastal fishing communities in Ghana. Drawing on previous studies (Carpenter, 2010; Zhang et al., 2013), Renu et al. (2015) aver that all community interventions based on the Health Belief Model (HBM) have proven to be effective in bringing about behavioural change. This research extends the inquiry to explore demographic and psychographic factors, contributing a new dimension to the discourse on public health communication in fishing communities in Winneba.

1.1 Research Objectives

(i) To examine how the demographic, social, economic, and occupational conditions of artisanal fishers in Winneba shape decision-making regarding adherence to COVID-19 preventive protocols.

(ii) To understand the factors that shape the health perceptions of fishers in Winneba regarding COVID-19 preventive protocols.

II. LITERATURE REVIEW

2.1 Nature of Non-Adherence

Non-adherence to preventive protocols undermines collective protection, leading to higher infection rates and prolonging the pandemic. Globally, studies have revealed multiple social and psychological determinants of non-adherence. In the United Kingdom (UK), Williams et al. (2020), through a qualitative study, identified six themes on reasons for non-adherence to COVID-19 protocols, namely, alert fatigue, inconsistent rules, lack of trust in government, helplessness, rebelliousness, and reduced perception of risk. Non-adherence manifested both as deliberate rule-breaking and subjective reinterpretation of rules. Similarly, Tay et al. (2024) in a two-wave longitudinal cohort study in Singapore observed that adherence to preventive measures decreased over time, with older adults and those with greater trust in public health experts showing higher compliance. Fear of infecting family members also emerged as a key motivator.

In Africa, existing studies suggest that socio-economic realities often compete with public health compliance. In the Democratic Republic of Congo, Ditekemena et al. (2021) found that more than half of the 3268 participants did not wear masks, while 41.7% failed to observe distancing. Non-adherence was significantly associated with low education, unemployment, crowded housing, and not being a healthcare worker. de Noronha et al. (2022), examining non-adherence in Portugal, similarly highlighted that men, students, and those with lower socio-economic status were less likely to comply.

Within Ghana, several studies reveal a persistent knowledge-practice gap. Okyere et al. (2020) studied nurses in Tamale and found that while 60.2% had adequate knowledge, only 9.1% demonstrated high adherence. Predictors of knowledge included marital status and information source, while adherence varied by facility type. Apanga and Kumbeni's (2021) study reveals low adherence among pregnant women in Nabdam District, with only 18% wearing masks and 22% practising social distancing. Their findings showed that knowledge of transmission pathways significantly predicted adherence behaviours.

In all, the pattern of findings of existing studies indicates that beyond knowledge, trust, social norms, and perceived costs strongly influence adherence. These findings also highlight inconsistent adherence even within professional groups and suggest parallels with informal economies where survival imperatives outweigh compliance. These insights are particularly relevant for fishing communities where daily subsistence requires physical proximity and mobility.

Existing literature has addressed adherence among healthcare workers, pregnant women, and urban populations, but fisherfolk remain underrepresented in COVID-19 adherence research. Given their unique socio-economic vulnerabilities and communal practices, there is a significant need to explore factors influencing non-adherence in fishing communities. This study, therefore, seeks to fill that gap by examining socio-economic, cultural, and behavioural determinants among fishers in Winneba.

2.2 Theoretical Review

Several theoretical models help explain COVID-19 non-adherence. Social Cognitive Theory stresses observational learning, highlighting the role of respected community leaders in modelling adherence. Protection

Motivation Theory, used in Janz and Becker (1984), suggests that adherence depends on self-efficacy, perceived response efficacy, and perceived costs. Risk perception frameworks also explain why misinformation and mistrust undermine compliance. The Health Belief Model emphasises perceived susceptibility, severity, benefits, and barriers.

The Health Belief Model (HBM) is one of the most widely used conceptual frameworks in health behaviour research. It has been employed to explain both the initiation and maintenance of health-related behaviours and to guide the design of health behaviour interventions (Louis, 2016; Renu et al., 2015).

The HBM was developed by social psychologists Irwin M. Rosenstock, Godfrey M. Hochbaum, S. Stephen Kegels, and Howard Leventhal (Rosenstock, 1974). It emerged from the synthesis of two foundational theories: Stimulus-Response (S-R) Theory and Cognitive Theory (C-R) (Louis, 2016). Stimulus-Response Theory emphasises that behaviour is a result of learned associations between stimuli and responses. If the relationship between the stimulus and response is strong, the response is more likely to occur when the stimulus appears (Frings et al., 2023). Cognitive Theory posits that individuals form perceptions and beliefs based on their interpretations of their environment, which are often subject to distortions and biases. These beliefs, shaped by early experiences, inform how individuals view themselves, others, and future events (Mander & Kingdom, 2015; Reissing & VanZuylen, 2015). By integrating these perspectives, the HBM explains why individuals choose to engage in health behaviours such as prevention, screening, or treatment adherence

2.2.1 Core Constructs of the Health Belief Model

Originally, the HBM included five key constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and self-efficacy (Rosenstock et al., 1994). Later adaptations included a sixth construct, cue to action (Louis, 2016). These constructs help predict and explain health behaviour adoption.

Perceived Susceptibility: This refers to an individual's assessment of their risk of contracting a health condition. People who perceive themselves as vulnerable to a disease are more likely to engage in preventive behaviours. For instance, individuals with underlying health conditions or those living in high-risk environments may adopt COVID-19 preventive protocols such as mask-wearing and hand hygiene to minimise their risk of infection.

This involves an individual's belief about the seriousness of a health condition and its potential consequences. If a person believes that COVID-19 is a serious and life-threatening illness, they are more likely to comply with preventive measures (Janz & Becker, 1984; Louis, 2016).

This construct reflects an individual's belief in the effectiveness of a recommended action to reduce the threat of illness. For example, if a person believes that wearing masks, practising social distancing, and handwashing are effective in preventing COVID-19, they are more likely to adopt these behaviours (Renu et al., 2015; Taylor et al., 2006).

Even when individuals believe in the benefits of a health behaviour, they may be discouraged by perceived obstacles such as cost, inconvenience, or discomfort (Louis, 2016; Taylor et al., 2007). In the case of COVID-19, some people may avoid using masks due to breathing difficulties or refrain from using sanitisers because of cost or skin irritation.

Self-efficacy refers to one's confidence in their ability to perform a specific health behaviour. Individuals who believe they can successfully carry out preventive actions are more likely to engage in them, even in the face of obstacles (Louis, 2016; Renu et al., 2015). For instance, someone who feels confident in their ability to adhere to COVID-19 protocols is more likely to consistently follow them.

Cues to action are triggers that prompt an individual to adopt a health behaviour. These cues may be internal (e.g., experiencing symptoms) or external (e.g., media messages, conversations, public service announcements) (Louis, 2016; Renu et al., 2015; Taylor et al., 2007). Consistent exposure to such cues, for example, through public health campaigns, can reinforce desired behaviours.

2.2.2 Integration of Constructs: Perceived Threat and Behavioural Evaluation

The five traditional constructs of the HBM can be grouped into two major dimensions that drive health behaviour:

Perceived Threat: This is a combination of perceived susceptibility and perceived severity. When an individual believes they are at risk of contracting a disease and also perceives that disease as serious, they experience a heightened sense of threat. This perception increases the likelihood of adopting preventive behaviours (Renu et al., 2015).

Behavioural Evaluation (Expectancy): This includes: Perceived benefits of taking action; Perceived barriers to the action, and Self-efficacy, or the belief in one's ability to overcome the barriers.

Together, these factors shape whether a person will engage in a health-promoting behaviour. If the perceived benefits outweigh the barriers, and the individual feels confident in their ability to act, behavioural change is likely.

Cue to Action as an Additional Construct: Originally less emphasised, cue to action has gained increased scholarly attention in recent years (Holmyard, 2020). It represents the role of external and internal prompts in reinforcing

health perceptions and initiating behavioural change. For example, constant reminders about COVID-19 from the media or peers may reinforce existing health beliefs and motivate action.

2.2.3 Health Belief Model and COVID-19 Scholarship

The Health Belief Model (HBM) has been widely recognised as one of the most extensively applied frameworks in health behaviour research. According to Renu et al. (2015), the HBM is used more frequently than any other behavioural theory in studies related to health behaviour. Citing Hochbaum et al. (1952), Renu et al. (2015) attribute the model's extensive use to its status as the first behavioural theory developed in the health field. They further argue that its adaptability to various contexts—including both household and community settings—contributes significantly to its widespread application.

Originally, the HBM was formulated to explain the poor public response to tuberculosis (TB) screening programmes in the United States (Louis, 2016). Since then, it has been applied to a wide range of health-related behaviours, including the prevention of sexually transmitted infections such as HIV/AIDS (Babbie, 2010; Champion & Skinner, 2008), child and adolescent health behaviours, and mental health interventions (Finfgeld et al., 2003). The model's versatility and predictive power have enabled its consistent use across diverse public health contexts.

With the emergence of the novel coronavirus (COVID-19), the HBM has been widely adopted to understand public responses to the pandemic. In Brazil, Costa (2020) used the model to examine the determinants of COVID-19 infection risk. In Malaysia, Wong et al. (2020) applied the HBM in an online survey to assess predictors of the intention to receive a COVID-19 vaccine and willingness to pay for it. Similarly, Zampetakis and Melas (2021) employed the model to study vaccination intentions among the Greek population. In Iran, Shahnazi et al. (2020) utilised the HBM to assess preventive health behaviours in response to the pandemic.

Although COVID-19 is an evolving global phenomenon, scholarly literature addressing it continues to expand rapidly. The consistent use of the Health Belief Model in such studies affirms Renu et al.'s (2015) assertion that the HBM remains one of the most robust and adaptable behavioural theories in health research. Drawing from this growing body of literature, the present study contributes to the COVID-19 discourse from an African perspective, with a particular focus on health behaviour within Ghana's fishing sector

III. METHODOLOGY

To explore the complexities and nuanced factors influencing fishers' non-adherence to COVID-19 preventive protocols in the Winneba fishing communities, a qualitative approach was considered most appropriate. This method enables rich, contextualised descriptions and interpretations of human behaviour, particularly in relation to health interventions (Creswell & Baez, 2021)

The study adopted a single instrumental case study design to interrogate the health behaviours of fishers in three selected fishing communities (Ayipe, Akosua Village, and Woarabeba) within the Winneba enclave (Creswell, 2013; Stake, 1995). Consistent with Creswell (2013) and Yin (2018), multiple data collection methods were used, including naturalistic observation, semi-structured interviews, and focus group discussions (FGDs).

To situate the research in the local context, transect walks were undertaken in each of the three communities. These observations enabled the researcher to identify behavioural patterns and validate the extent of the COVID-19 protocol non-compliance among fishers, as reported by Okyere et al. (2020). Based on the insights from the observations, purposive sampling was employed to recruit participants. In each community, the chief fisherman, recognised as a key informant with extensive knowledge of fishing operations and community dynamics, was selected for one-on-one semi-structured interviews to explore their perspectives on COVID-19 and its associated health behaviours.

In addition to the interviews, one focus group discussion (FDG) was conducted in each of the three communities to capture diverse perspectives on COVID-19 Health behaviours (Creswell, 2013). Participant selection for the FGD was informed by demographic variables central to the Health Belief Model, particularly age and gender. Participants included fishermen, fish processors, and fish sellers, with two groups comprising nine (9) members and one group comprising seven (7) members. Across the three groups, a total of 25 participants were involved, 11 males and 14 females, ranging in ages from 19 to 53 years. All sessions were conducted in accordance with COVID-19 safety protocols, including social distancing, hand washing, and mask wearing. For reporting purposes, all participants were pseudonymised. Participants in the one-on-one, face-to-face interviews were assigned codes CF1 to CF3. Focus group discussions were labelled FGD1 to FGD3, with participants within each group identified as PM1, PM2, and so on.

All interviews and focus group discussions were audio-recorded, transcribed verbatim, and translated from Fante into English, since the sessions were conducted in the local language. The transcripts were then systematically analysed using the Health Belief Model as a guiding framework for coding (Asmussen & Creswell, 1995; Creswell, 2013). From this process, initial codes were developed and organised into broader thematic categories. Thematic

analysis was ultimately employed, enabling inductive interpretation of the data and extraction of meaningful insights (Creswell & Creswell, 2018).

IV. FINDINGS & DISCUSSION

4.0 Findings

4.1. Demographic, Socioeconomic and Occupational Factors on COVID-19 Compliance

4.1.1 Incompatibility of COVID-19 Preventive Protocols with the Demographic Realities of Fishers

This study found that the demographic realities of the fishers are a barrier to their adherence to the COVID-19 protocols. Their settlements are densely populated, and the coastal environment is naturally overcrowded. Additionally, sanitation at the landing beach sites is suboptimal due to the nature of fishing activities. The study established that fishers in Winneba struggle not only to observe social distancing during fishing activities but also within their homes. This finding corroborates with Okyere et al. (2020), who also discovered that the nature of fishing along the coast of Ghana makes voluntary adherence to COVID-19 social distancing protocols difficult for fishers, even when they are aware of the disease, and the initial transect walks conducted by the researcher confirmed this. This finding also supports Ditekemen et al. (2021), who indicated that crowded housing is a factor associated with non-adherence to COVID-19 protocols.

In line with Akutse and Samey (2015), high illiteracy rates and low living standards were observed in the area, with many fishers earning barely enough to sustain themselves. In addition, residents living along the Winneba coast report to health centres more frequently than those in inland communities (Akutse & Samey, 2015). Socioeconomic issues such as school dropouts, teenage pregnancy, parental neglect, child labour, and child trafficking further compound the vulnerability of these communities. This aligns with the de Noronha et al. (2022), which connected non-adherence to COVID-19 protocols more to people with lower socioeconomic status.

Each fishing community has a chief fisherman. Together, there is a main chief fisherman who is appointed by the two Traditional Asafo Companies (Tuafo and Dentsefo). The main chief fisherman traditionally governs the fishing sector of the municipality, with sub-communities led by other community chief fishermen.

Taylor et al. (2007) emphasise the importance of analysing demographic factors such as low income, cultural exclusion, and limited access to health services when applying the Health Belief Model (HBM). To them, these factors, in combination with the model's cognitive components, offer a deeper understanding of health behaviours. The above demographic description contextualises the fishers' attitudes and behaviours towards COVID-19.

4.1.2. Coastal Lifestyle as a Barrier to Adherence to COVID-19 Preventive Protocols

Social Factors: The lifestyle of fishers in Winneba is inherently communal and crowded. From shared housing to tightly clustered workspaces at sea and onshore, their daily routines contradict the requirements of social distancing. This reality serves as a major barrier to the adoption of COVID-19 preventive behaviours.

According to the HBM, when perceived barriers, such as physical limitations, are significant, they can inhibit the adoption of health behaviours (Renu et al., 2015). These barriers are deeply rooted in the structure of fishing life and are therefore hard to overcome. One participant (CF2) explained:

> We know the coronavirus protocols. We know that we need to wear mask, wash our hands and stay away from one another, but considering the nature of our jobs, we cannot do that. Massa, how do you wear a nose mask to sea, to fish? How do you wear a nose mask to draw net from the sea? How can we distance ourselves from each other when we are drawing the nets? So you see, the corona protocols do not favour us.
> (CF2, in-depth interview)

This finding underscores how environmental and occupational constraints in the fishing communities of Winneba contribute to diminished self-efficacy, thereby reducing the likelihood of health behaviour change. Within the framework of the Health Belief Model, an individual's belief in their ability to adopt a health behaviour (self-efficacy) is central to the success of any health communication intervention. High self-efficacy enables individuals to overcome perceived barriers and engage in protective behaviours. Conversely, when these barriers appear insurmountable, as observed among the fishers in Winneba, self-efficacy declines, making the adoption of new health behaviours less probable.

Economic Factors: The economic realities of the fishers also hinder their ability to comply with health guidelines. This study revealed that the overall standard of living among fishers in Winneba is low. While canoe owners tend to benefit most from small-scale fishing operations, the majority of individuals in the fishing supply chain, particularly those in the post-harvest sector, earn meagre incomes. Women constitute approximately 80–90% of this post-harvest labour force (Holmyard, 2020). Compliance with COVID-19 preventive protocols incurs financial costs, including the purchase of hand sanitisers, face masks, soap, and tissues, which many households in these communities

cannot afford. Although handwashing and face mask usage are considered among the most cost-effective preventive measures, this study found that most parents in Winneba's fishing communities are unable to consistently procure face masks for themselves and their families.

> Throughout the day, my family and I spend a maximum of GHC 15. A mask costs 50 pesewas each, and we are six in the family. I cannot afford it. As for the sanitisers, I don't even want to go there — they are even more expensive. (CF3, in-depth interview)

This quote illustrates how health behaviours are perceived as luxuries beyond reach. The cost associated with adherence to the protocols is a perceived barrier to the fishers of Winneba. Though economic barriers may not be as deeply entrenched as the social ones, their impact is still significant, and they intersect to create a complex web of non-adherence. These findings align with Dovlo et al. (2016), whose study in Ireland found that predictors of non-adherence varied by behaviour. Non-adherence to handwashing, mask use, and sanitisers was linked to perceived costs, while non-adherence to social distancing was higher among lower socio-economic groups.

4.2 Health Perceptions and COVID-19 Preventive Behaviors

4.2.1 COVID-19 as a Dangerous Distant Disease

While Okyere et al. (2020) identified heightened concern about the vulnerability of fishing communities to COVID-19, this study found that many fishers in Winneba perceive the threat differently. They believe that their proximity to the sea offers natural protection. This belief is rooted in the idea that seawater, because of its salty nature, is medicinal. Constant exposure to the sea and its environment is believed to safeguard them from the virus. Better still, they may survive it if they ever contract it perchance. In line with the findings of Williams et al. (2021), there is a reduced perception of the risk of the disease. In addition, the fishers hold the belief that the wind that blows around the seashore is capable of disinfecting any surfaces that may be stained or infected with the coronavirus. One participant (CF3) explained:

> My brother, we are blessed. God knows we are not as rich and powerful as other people; that is why He placed us here by the sea. Everything about the sea is medicinal: the fish, the air, the seawater — everything. We are safe.
> (CF3, in-depth interview)

This belief diminishes their perception of both the severity and susceptibility to COVID-19. The fishers do not see themselves as highly susceptible to COVID-19 as the study of Okyere et al. (2020) revealed. According to the HBM, perceived threat, a function of perceived severity and susceptibility, plays a crucial role in shaping health behaviour (Rosenstock et al., 1994). For the fishers, the perceived threat is low, thus reducing motivation to adopt preventive measures. They do not see the disease as dangerous to them, and they also do not believe that they are susceptible to the disease as compared to residents in other locales.

Moreover, the misconstrued beliefs and perceptions are shaped by media cues to action that appear irrelevant to their lived experiences. They report never having seen or heard of a fisher from their community dying of COVID-19. Instead, they associate COVID-19 deaths with affluent individuals from different backgrounds. As one participant in the FGD2 remarked:

> Brother, have you heard that any of the radio or TV stations is reporting that someone from a fishing community has died of COVID-19 before? No one has died! We are here, and we know ourselves; none of us here has died because of COVID-19. We only hear reports from the media about the death of rich people, but we are here, and nothing is happening to us. God is protecting us!
> (PM3, FGD2)

Clearly, they do not identify with the cue to action they receive from the media. To them, the cue that comes from the media about the negative effects of COVID-19 seems to exempt them from the perceived threat of the disease. This indicates a lack of structural similarity between the messengers (media) and the audience (fishers), which undermines message credibility. Kreuter and McClure (2004) assert that when health messages lack demographic or attitudinal resemblance to the audience, they are less likely to influence behaviour. The media cues, therefore, do not generate a sufficient sense of urgency among fishers.

In health communication, the evidential approach refers to the use of data to help a group identify with a health issue and see its relevance to their context. It is essential for persuading the audience to adopt a health behaviour (Kreuter & McClure, 2004). This study discovered that the evidential approach is largely missing from COVID-19 messaging targeted at these communities. As a result, fishers remain unconvinced of the disease's relevance to their lives, reinforcing their belief that COVID-19 is a distant threat, one that affects only the affluent.

4.2.2 Perceived Expectancy of COVID-19 Preventive Protocols

The perceived expectancy component of the HBM comprises perceived benefits, perceived barriers, and self-efficacy. This study found that fishers in Winneba generally acknowledge the benefits of COVID-19 preventive protocols and believe in their effectiveness. This aligns with Okyere et al. (2020), who also noted a favourable attitude towards preventive behaviours.

However, a paradox exists: despite recognising these benefits, the fishers still do not adhere to the protocols. This contradiction is due to the absence of compelling evidence within their community showing the negative consequences of non-adherence. They report no local deaths or severe cases, weakening the effect of cues to action.

According to the HBM, cues to action, both internal and external, are supposed to trigger behavioural change. In this case, however, external cues, such as media messages and public health campaigns, lack local relevance. Internal cues, like symptoms, also appear insufficiently alarming in their context. Therefore, even though the perceived benefits are acknowledged, the overwhelming barriers and weak cues to action prevent actual behavioural change.

In sum, this study demonstrates that the health behaviour of fishers in Winneba towards COVID-19 is shaped by an interplay of demographic realities, social and economic barriers, weak perceived susceptibility, and low perceived threat. The cues to action, largely misaligned with their lived experiences, reinforce the notion of COVID-19 as a "dangerous but distant disease", irrelevant to their lives.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study found that fishers in Winneba, due to their way of life, are living at the mercy of COVID-19. The crowded nature of their settlements, coupled with their fishing methods, has caused them to adopt a clustering lifestyle to the extent that adhering to COVID-19 preventive protocols has become a challenge. The social barriers are extreme, hence the fishers do not see themselves as able to adhere to the COVID-19 preventive protocols. Aside from this, the economic condition of the fishers is also another barrier to adherence. The monetary cost associated with adhering to the COVID-19 protocols is a barrier to the fishers in Winneba in their quest to observe the said protocols.

Although there are visible barriers that genuinely prevent the fishers of Winneba from adhering to COVID-19 preventive protocols, this study found that targeted cues to action—such as advertisements, health campaigns, and other interventions providing evidence of the severity of coronavirus specifically relevant to fishers—may persuade them to adopt better health behaviours regarding COVID-19 prevention. Unfortunately, the cues to action (health campaigns, news reports, health reports, among others) are not relatable enough to the fishers, hence they have reinforced their perception that COVID-19 is a dangerous distant disease. The premise of this belief is that if the disease is that dangerous, then the disease should have infected them (the fishers) because of their lifestyle. Apparently, there is little or no perceived threat of the COVID-19 disease to the fishers of Winneba.

5.2 Recommendation

This study recommends that the unique lifestyle of fishers in Winneba be thoroughly considered in the design and implementation of any COVID-19 health communication interventions. This includes the need to develop and roll out target-specific campaigns that are tailored to the daily routines, cultural beliefs, and social structures of the fishing community. Such campaigns should incorporate relatable evidence and testimonials, ideally from within or near the community, to provide persuasive cues to action that can effectively influence health behaviour change.

Furthermore, future health communication efforts in Winneba and other coastal areas of Ghana should begin with a comprehensive mapping of local communication networks. Understanding how information flows, through community leaders, local radio, landing beach committees, and faith-based institutions, can help ensure that cues to action are culturally sensitive, credible, and contextually appropriate. Importantly, the study highlights that the low standard of living and poor socio-economic conditions of the fishers are primary barriers to adherence to COVID-19 preventive protocols. The cost of masks, hand sanitisers, and other hygiene materials remains prohibitive for many. Given that the sustainability of any health intervention depends largely on addressing these socio-economic challenges, the study recommends that Non-Governmental Organisations (NGOs) and development partners working in coastal communities consider rolling out livelihood empowerment projects. These could include skills training, microfinance initiatives, or value chain support for fish processing and marketing.

In addition to the above, the study recommends that the Ghana Health Service and the Ministry of Information lead efforts to create culturally tailored health education campaigns, engaging trusted local opinion leaders such as chief fishermen, market queens, and religious leaders, among others, to co-create and deliver health messages. The Ministry of Fisheries and Aquaculture Development should also take steps to institutionalise public health support within the fisheries sector. Occupational health protocols should be integrated into the national fisheries policy, ensuring the provision of basic public health infrastructure (e.g., handwashing stations) at landing beaches and fish markets.

To strengthen community health systems in coastal areas, the Ghana Health Service should deploy more community health nurses or public health officers to towns like Winneba for regular sensitisation, education, and outreach, making health promotion more continuous, personal, and responsive to community needs. To leverage local governance structures, coastal district assemblies should be empowered and resourced to support community-level health promotion using culturally appropriate and participatory approaches, rather than relying solely on top–down message dissemination. The Ministry of Health, in collaboration with academic institutions, should invest in ongoing behavioural research in coastal and informal communities to inform future pandemic response strategies and tailor interventions to specific demographic realities. Finally, public health responses in coastal areas should be implemented through a coordinated, multisectoral framework involving stakeholders from the health, fisheries, local government, and social protection sectors. Such collaboration will help ensure that public health strategies are integrated, sustainable, and contextually effective.

Declaration of Interest

The author declares that he does not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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REFERENCES

Ajzen, I. (1998). Models of human social behaviour and their application to health psychology. *Psychology & Health, 13*(4), 735–739. https://doi.org/10.1080/08870449808407426

Akutse, P., & Samey, B. (2015). Baseline survey report for Winneba and Apam (GH2014_ACT013_SNV; 90 pp.). USAID/Ghana Sustainable Fisheries Management Project (SFMP). Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island; SNV Netherlands Development Organisation.

Apanga, P. A., & Kumbeni, M. T. (2021). Adherence to COVID-19 preventive measures and associated factors among pregnant women in Ghana. *Tropical Medicine & International Health, 26*(6), 656–663.

Asmussen, K. J., & Creswell, J. W. (1995). Campus response to a student gunman. *The Journal of Higher Education, 66*(5), 575–591. https://doi.org/10.2307/2943937

Babbie, R. (2010). *The practice of social research* (12th ed.). Wadsworth Cengage Learning.

Bennett, P., Noble, S., Johnston, S., Jones, D., & Hunter, R. (2020). COVID-19 confessions: A qualitative exploration of healthcare workers' experiences of working with COVID-19. *BMJ Open, 10*(12), e043949. https://doi.org/10.1136/bmjopen-2020-043949

Carpenter, C. J. (2010). A meta-analysis of the effectiveness of Health Belief Model variables in predicting behaviour. *Health Communication, 25*(8), 661–669. https://doi.org/10.1080/10410236.2010.521906

Champion, V. L., & Skinner, S. C. (2008). The Health Belief Model. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behaviour and health education: Theory, research, and practice* (4th ed., pp. 45–65). Jossey-Bass.

Costa, M. F. (2020). Health Belief Model for coronavirus infection risk determinants. *Revista de Saúde Pública, 54*, 47. https://doi.org/10.11606/s1518-8787.2020054002494

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). SAGE Publications.

Creswell, J. W., & Creswell Báez, J. (2021). *30 essential skills for the qualitative researcher* (2nd ed.). SAGE Publications.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

de Noronha, N., Moniz, M., Gama, A., Laires, P. A., Goes, A. R., Pedro, A. R., Dias, S., Soares, P., & Nunes, C. (2022). Non-adherence to the COVID-19 lockdown: Who are they? A cross-sectional study in Portugal. *Public Health, 211*, 5–13. https://doi.org/10.1016/j.puhe.2022.07.001

Ditekemena, J. D., Mavoko, H. M., Obimpeh, M., Van Hees, S., Siewe Fodjo, J. N., Nkamba, D. M., Tshefu, A., Van Damme, W., Muyembe, J. J., & Colebunders, R. (2021). Adherence to COVID-19 prevention measures in the Democratic Republic of the Congo: Results of two consecutive online surveys. *International Journal of Environmental Research and Public Health, 18*(5), Article 2525. https://doi.org/10.3390/ijerph18052525

Dovlo, E., Amador, K., & Nkrumah, B. (2016). *Report on the 2016 Ghana marine canoe frame survey* (ASFA Monographs). Ministry of Fisheries and Aquaculture Development. https://www.crc.uri.edu/download/Final-2016-Canoe-Frame-Survey-Report.pdf

Finfgeld, D. L., Wongvatunyu, S., Conn, V. S., Grando, V. T., & Russell, C. L. (2003). Health Belief Model and Reversal Theory: A comparative analysis. *Journal of Advanced Nursing, 43*(3), 288–297. https://doi.org/10.1046/j.1365-2648.2003.02712.x

Frings, C., Foerster, A., Moeller, B., Pastötter, B., & Pfister, R. (2023). The relation between learning and stimulus–response binding. *Psychological Review, 131*(7), 1290–1296. https://doi.org/10.1037/rev0000449

Harrington, N. G. (Ed.). (2015). *Health communication: Theory, method, and application* (1st ed.). Routledge. https://doi.org/10.4324/9780203366820

Holmyard, N. (2020, April 13). WSI: COVID-19 crisis will deepen gender inequalities in seafood sector. *SeafoodSource*. https://www.seafoodsource.com/news/business-finance/wsi-covid-19-crisis-will-deepen-gender-inequalities-in-seafood-sector

Janz, N. K., & Becker, M. H. (1984). The Health Belief Model: A decade later. *Health Education Quarterly, 11*(1), 1–47. https://doi.org/10.1177/109019818401100101

Kreuter, M. W., & McClure, S. M. (2004). The role of culture in health communication. *Annual Review of Public Health, 25*(1), 439–455. https://doi.org/10.1146/annurev.publhealth.25.101802.123000

Louis, J. P. (2016). Examining constructs of the Health Belief Model as predictors of Haitian men's intention regarding prostate cancer screening [Doctoral dissertation, Barry University]. Sigma Repository. https://sigma.nursingrepository.org/handle/10755/621199

Mander, H., & Kingdon, D. (2015). The evolution of cognitive–behavioral therapy for psychosis. *Psychology Research and Behaviour Management, 8*, 63–73. https://doi.org/10.2147/PRBM.S52267

Mefalopulos, P. (2008). *Development communication sourcebook: Broadening the boundaries of communication*. World Bank Publications.

Okyere, I., Chuku, E. O., Ekumah, B., Angnuureng, D. B., Boakye-Appiah, J. K., Mills, D. J., Babanawo, R., Asare, N. K., Aheto, D. W., & Crawford, B. (2020). Physical distancing and risk of COVID-19 in small-scale fisheries: A remote sensing assessment in coastal Ghana. *Scientific Reports, 10*(1), 1–13. https://doi.org/10.1038/s41598-020-79898-4

Reissing, E. D., & VanZuylen, H. (2015). Sexuality, theories of. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioural Sciences* (2nd ed., pp. 846–852). Elsevier. https://doi.org/10.1016/B978-0-08-097086-8.35030-9

Renu, G., George, A., Pai, M. S., Nayak, B. S., Mundkur, S. C., Nayak, D. M., & Shashidhara, Y. N. (2015). Health Belief Model: A theoretical framework for the development of home safety supervisory program in childhood injury. *International Journal of Current Research, 7*(1), 22691–22695. https://www.researchgate.net/publication/295906713

Rosenstock, I. M. (1974). Historical origins of the Health Belief Model. *Health Education Monographs, 2*(4), 328–335. https://doi.org/10.1177/109019817400200403

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1994). The Health Belief Model and HIV risk behaviour change. In R. J. DiClemente & J. L. Peterson (Eds.), *Preventing AIDS: Theories and methods of behavioural interventions* (pp. 5–24). Springer. https://doi.org/10.1007/978-1-4899-1193-3_2

Sarpong, E., & Obeng, G. (2020, August 21). COVID-19: The Ghana case. *Good Governance Africa*. https://gga.org/covid-19-the-ghana-case/

Shahnazi, H., Ahmadi-Livani, M., Pahlavanzadeh, B., Rajabi, A., Hamrah, M. S., & Charkazi, A. (2020). Assessing preventive health behaviours from COVID-19: A cross-sectional study with Health Belief Model in Golestan Province, Northern Iran. *Infectious Diseases of Poverty, 9*(1), 1–9. https://doi.org/10.1186/s40249-020-00776-2

Stake, R. E. (1995). *The art of case study research*. SAGE Publications.

Tay, E. H., Shafie, S., Shahwan, S., et al. (2024). Adherence to COVID-19 measures and associated factors: Evidence from a two-wave longitudinal study in Singapore. *BMC Public Health, 24*, Article 2839. https://doi.org/10.1186/s12889-024-20256-8

Taylor, S. E., Welch, W. T., Kim, H. S., & Sherman, D. K. (2007). Cultural differences in the impact of social support on psychological and biological stress responses. *Psychological Science, 18*(9), 831–837. https://doi.org/10.1111/j.1467-9280.2007.01987.x

Williams, S. N., Armitage, C. J., Tampe, T., & Dienes, K. A. (2021). Public perceptions of non-adherence to pandemic protection measures by self and others: A study of COVID-19 in the United Kingdom. *PLOS ONE, 16*(10), Article e0258781. https://doi.org/10.1371/journal.pone.0258781

Wong, L. P., Alias, H., Wong, P. F., Lee, H. Y., & AbuBakar, S. (2020). The use of the Health Belief Model to assess predictors of intent to receive the COVID-19 vaccine and willingness to pay. *Human Vaccines & Immunotherapeutics, 16*(9), 2204–2214. https://doi.org/10.1080/21645515.2020.1790279

World Health Organisation (WHO). (2020, December 28). WHO daily press conference on novel coronavirus - 28 December 2020 [Press release]. https://www.who.int/multi-media/details/who-daily-press-conference-on-novel-coronavirus---28-december-2020

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.

Zampetakis, L. A., & Melas, C. (2021). The Health Belief Model predicts vaccination intentions against COVID-19: A survey experiment approach. *Applied Psychology: Health and Well-Being, 13*(2), 469–484. https://doi.org/10.1111/aphw.12262

Zhang, J., Nonvignon, J., & Mao, W. (2020, July 28). How well is Ghana—with one of the best testing capacities in Africa—responding to COVID 19? *Brookings*. https://www.brookings.edu/blog/future-development/2020/07/28/how-well-is-ghana-with-one-of-the-best-testing-capacities-in-africa-responding-to-covid-19/

Zhang, L. L., Dalal, K., & Wang, S. M. (2013). Injury-related risk behaviour: A Health Belief Model-based study of primary school students in a safe community in Shanghai. *PLoS ONE, 8*(8), e70563. https://doi.org/10.1371/journal.pone.0070563