Understanding Individual Perception and Experience of Fear during Mandatory Quarantine: Lessons from the COVID-19 Pandemic in Ghana

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Authors' contributions

This work was carried out in collaboration between both authors. Author DWO designed the study, wrote the protocol, and wrote the first draft of the manuscript. Author JA managed the literature searches and discussion of the study. Both authors read and approved the final manuscript.

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ABSTRACT

The coronavirus disease 2019 (COVID-19) pandemic has manifested differently across the globe in terms of its sociocultural and economic impacts. The World Health Organization (WHO) developed guidelines for the effective implementation of local or national quarantine protocols to quickly detect people who have been exposed to COVID-19 and separate them from others during the disease's incubation period. This paper examines how Ghanaians perceive and experience fear under quarantine in the various designated quarantine centres (Pentecost Community Centre and Prampram Convention Centre).
Drawing on the interpretive inquiry lens, data were collected through phone/Skype interviews with six individuals who had been quarantined with experience to share. Interpretative Phenomenology Approach (IPA) for data analysis was used to interpret the views and experience of participants

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under quarantine and how that affected their well-being. Using the WHO quarantine guidelines, our analyses focused on an individual's experience of fear under quarantine, offering an insight into what characterises their fear as well as exploring events, coping strategies and the implementation of standard quarantine protocols in the country.

The results showed that the quarantine protocols aligned with the WHO guidelines, albeit with some exceptions; these omissions partly compounded the fear experienced by those who were quarantined in the various centres. The results help to reveal the specific events that led to fear. For example, the fear of being infected by others at the quarantine centres, the unknown duration of the quarantine, the potential loss of lives and the uncertainty of recovery. The participants managed their fearful experiences and tension at the quarantine centres by coming together to pray every morning, share the word of God and engage in jokes. This paper contributes to issues of distinct emotions and individual viewpoints under mandatory quarantine during the COVID-19 pandemic in a specific country context.

1. INTRODUCTION

In March 2020, the World Health Organization (WHO) formally declared the coronavirus disease 2019 (COVID-19) a pandemic, with the global mortality rate estimated to be 3.4% [1]. Scientists and other health officials have since focused their efforts on monitoring the infection rate as well as sustaining and strengthening healthcare systems, which have been severely affected. Governments' efforts have geared towards the implementation of wide-ranging public health protocols, such as lockdowns, social distancing and mandatory quarantine to control the spread of the disease. Indeed, the literature outlines several public health measures scientifically proven to break the chain of disease transmission, and quarantine is one of those measures [2].

The WHO has developed guidelines for countries to effectively implement local or national quarantine protocols to fight the COVID-19 pandemic [3,4]. The aim is to prevent the transmission of the virus while minimising the psychological impact on those affected by the virus and placed under quarantine. The guidelines require member countries to adhere to a set of protocols [3], including adequate preparation before the implementation of local quarantine protocols and the provision of clear communication to the citizenry regarding the need for the quarantine. Furthermore, authorities are expected to make provision for healthcare, financial support, physical protection, social and psychological support to those affected. Also, during the implementation of quarantine protocols, authorities should provide basic amenities, such as food, water, locations for infection prevention and control, and the health

of those quarantined should be continuously monitored [5,4].

The use of quarantine more recently for persons affected by the COVID19 pandemic has become an important public health tool for countries' globally. Quarantine is used to prevent the movement of individuals who have been exposed to a disease or to ascertain if an infectious individual will become unwell and to reduce the risk of spreading the infection [6, 7]. Again, is used to monitor the symptoms of the quarantined so that cases can be noticed at the earliest possible opportunity [6,4]. The importance of quarantine in reducing the transmission of infectious disease should not be underestimated [8], yet the likelihood of quarantine producing other sources of infection or other emotional antecedents is high if the implementation is not grounded in the principles of risk evaluation and local context consideration [9]. The use of quarantine to control infections is not new in public health and has a historical perspective. It became popular during the Ebola and SARS outbreaks.

A review of 3166 papers on the psychological impact of quarantine found that most individuals under quarantine are stressed, angry, and confused and subsequently experience negative post-traumatic stress [7]. Unpleasant experiences, such as constant fear, boredom, uncertainty, loss of freedom and suicidal thoughts, have been reported by individuals under quarantine [10]. Under Article 3 of the International Health Regulations (IHR), countries can enforce quarantine [11] but this must be legitimised within the confines of human rights and individual freedom [12]. Countries have, therefore, enacted laws and policies in line with the IHR to support the quarantine measures, and

those who refuse are either arrested, fined or both. Hence, on 28th March 2020, when Ghana detected its first COVID-19 case, the authorities announced measures to quarantine COVID-19 contacts at designated centres in Accra (Pentecost Community Centre and Pram-pram Convention Centre) and across all the regional capitals, in line with the WHO directives and global health policy initiatives [2]. To some extent, the implementation of quarantine in Ghana was met with resistance in some circles (i.e. Ghanaians arriving in Ghana from abroad and community leaders in the designated quarantine centres) due to the fear of the unknown, compounded by poorly communicated messages on quarantine.

Our study explores the distinct emotions of individuals in Ghana who were under quarantine due to COVID-19. It hereby uses an interpretative phenomenology approach to analyse their stories of fear under quarantine. We draw on the WHO guidelines on quarantine to assess the measures implemented by Ghana in quarantining COVID-19 contacts and analyse how effective the use of the guidelines connected to the stories of the affected individuals. The aim is to help reveal some of the difficult meanings associated with an individual's emotions when they are under quarantine. This paper argues that a good understanding of the individual's views regarding fear when under quarantine is important for positive outcomes, such as early recoveries and post-recovery support programs to minimise stigma. The benefits of quarantine, therefore, need to be considered against the psychological constructs such as fear and its negative impacts on individuals, their families and the general public [13].

The psychologist sees fear as an intense emotion experienced in the presence of a perceived threat associated with the presence of an object [14]. Fear is a natural and powerful human emotion that involves a universal biochemical response together with a high individual emotional response [15]. It alerts us to the presence of danger or the threat of harm, whether that danger is psychological or physical [16]. Thus, an assessment or judgement that there is a clear source of danger is essential to the experience of fear. Social constructivists position fear as a social construct through an expression of feelings [17,18]. A recent conceptualisation of fear categorised it as a social variable of emotions, often infectious, that may affect the behaviour of individuals or a group

during wars, public demonstrations, terrorist attacks and nationwide threats [19]. Again, fear is an emotion that disseminates differently across society due to individuals' lack of power and confidence to make decisions or act quickly because of their weakness [20]. We explore the individual's perception and attitude towards fear while in quarantine to understand the distinct emotions of the first cohort of people quarantined in Ghana during the COVID-19 pandemic, using the WHO protocols on quarantine as a framework.

2. METHODOLOGY

2.1 Study Design and Sampling

We used an innovative research design, combining media interviews of participants on the topic with semi-structured interviews designed by the research team – providing an interplay between media interview and the participants' views and first-hand experience of the issues [21]. A qualitative research method together with a purposive sampling technique was used. We contacted our potential participants through an intermediary (a radio presenter in a known media house), who interviewed the first individuals who tested positive for COVID-19 and were placed under quarantine. Interviews were arranged through phone and Skype calls. The interviews lasted between sixty and ninety minutes per participant. We informed the participants about the study approach and objectives, and they had the chance to ask questions. They were also assured of anonymity during and after the interview.

2.2 Demography of Participants

The six individuals who were quarantined and released after twice testing negative for COVID-19 results were contacted for the interview. The participants were four females and two males aged between 40 and 55 years. All six participants consider themselves middle class and are married with children. Four of the participants were Ghanaian who had travelled abroad and returned to Ghana. These four participants were taken straight from the airport to the designated quarantine centres after testing positive for COVID-19. The fifth person was picked up at home by health professionals through contact tracing, and the sixth person voluntarily went for a COVID-19 test and received a positive result.

2.3 Data Collection Method

We used a referral method (a presenter at a radio station), drawing on their interview and online commentaries on the issues to reach our selected participants to record their experience. This helped us to gain a broader view of the issues the participants faced under quarantine. The participants' experiences were important in this study, and they were encouraged to share them during and after the quarantine. This was supported by the media coverage of how the participants dealt with their fears under quarantine. This approach helped to give credibility to what the media published and what the participants said. The following questions were asked: Can you tell us what you were most fearful about when told you would be quarantined? Tell it as if you were reliving it again. Whom did you share your experience with and how did that feel? How did you deal with the experience?.

2.4 Qualitative Analysis

The interpretive phenomenology technique was used to analyse the interview data. The reason being the participants have lived experience of quarantine due to the COVID-19 pandemic to share. IPA is also useful to explore topics that are complex and emotionally laden [22]. We analysed the media stories published using the inductive content approach. This process helped us to move from specific to general issues to create a bigger picture. The method was chosen to enable the identification of themes surrounding the key issues that the participants experienced. First, we examined the content of the media publication on the issues to identify the key voices. Three important themes were identified, namely causes of fear, the physical and social aspects of fear, and approaches to cope with fear. Second, we analysed the initial themes identified from the media publication and compared them to the participants' interviews to identify similarities and differences. This approach helped us to find consistency in their stories and to explain and demonstrate meaning. Third, we reread the participants' interviews relating to each theme and reorganised them into new ones (i.e. expressive ways of fear). Fourth, an interpretation of the themes that disclosed the meaning of the participants' fearful experiences was consistently demonstrated in both the media publications and the conducted interviews and presented logically. Finally, we compared the themes with the WHO guidelines on quarantine under the COVID-19 pandemic to give meaning to the complex nature of fear during quarantine.

3. RESULTS AND ANALYSIS

Based on the participant's interviews and the media publications, three key themes were identified and presented. Each theme is discussed and presented in turn with its distinct understanding of the participant's experience of fear under quarantine.

3.1 Causes of fear under Quarantine

The central message that came through the participants' accounts of fear is that they did not know what to expect, the unknown duration of the quarantine, and the fear of being infected by others at the quarantine centres. They were concerned about their health and recognised the pressure on the health professionals to decide on their COVID-19-related symptoms. Fear was linked to the potential loss of lives and the uncertainty of recovery. From the participants' stories, it was clear that both the health professionals and government officials experienced some level of uncertainty in terms of treatment plan and support. This led to a fear of uncertainty: In a first-person account, a 40-year-old woman, Ann, described how she was taken away like a criminal when she arrived at the airport and brought to a quarantine centre without talking to family members who came to meet her because she had tested positive for COVID-19.

> "I was scared, I felt like a criminal and did not know what will happen to me. Many things were going through my mind. I asked myself if I had the virus, will they tell me? How will the centre look like and if I will return. At the quarantine centre, it felt like a "special prison", doors were locked and food placed in front of the door with no interaction with others" (Ann).

Another participant who returned from Europe, Nana, said:

> "I was told, I will be taken to a particular centre. However, I could not speak to any family member who came to meet me at the airport. I was confused and worried. The health professionals at the airport could have explained the process to me and my family a bit more. I got to the centre before calling my family. Again, I was worried that the wrong

test results could be given to me because of the number of people been tested at the same time" (Nana, 45 years).

Not knowing what to expect at the quarantine centres contributed to the participants' feelings of doubt about their health and lives [23]. For the participants, being quarantined was seen as a damaging experience that negatively influenced their lives, social relations with others and mental health. Repeated doubt about the conditions of a particular setting (e.g., the quarantine centre) and the support system available can lead to fear with harmful consequences for a person's well-being. In contrast to feeling uncertain, fear refers to the anticipation of this worrying event for the participants under quarantine, such that their continuous stay at the centres put their health and lives at risk [7]. As demonstrated by both Ann and Nana above, the way they were taken away made them feel like criminals, which compounded their fears. Nana called for clearer communication on the process of quarantine to both individuals and their families to reduce the uncertainties causing quarantine fear among suspected COVID-19 participants in Ghana.

3.2 The Physical and Social Aspects of Fear and their Disruptions

Another theme that emerged from the participants' stories was that the fear came with physical and emotional disruption, which represented worry about some social event with unwanted consequences. The participants described their fear as an unpleasant experience and emphasised the impact of their behaviour on others and the health professionals at the quarantine centres. Their fear manifested in physical changes, such as sweaty hands and an unsteady voice when speaking. Psychological changes were also expressed, such as a sense of uncertainty, nervousness and a burning sensation in their feet. Feelings of weakness and anxiety were accompanied by tiredness, feeling helpless and the pain of not knowing what will happen next. Some participants remembered experiencing fear on the bus to the quarantine centres, making them think they may not return home to see their families. For example, Maame, Alex and Kate, who returned from Europe and the USA, recounted their experience:

"It was a very emotional and anxious moment for me on the bus to the quarantine centre. I heard the number of people testing positive is going up and I'm are going to stay in the same environment with them. I was wondering what is going to happen to me," (Maame, 45 years female).
"It was a very traumatic and emotional experience. I felt unwell and weak at my knees. I nearly got into depression mode. I was worried because the information on testing was insufficient. Luckily I met another Ghanaian man who came from the USA and we consoled each other through our conversation" (Alex, 50 years, male).

"My friends and family members who came to the airport to meet me were sent home. I started to feel nervous from there. My sample was taken when I arrived at the centre but no information was provided on when I will get the result. I met others at the centre who were waiting for their results as well" (Kate, 40 years, female).

These participants called for effective communication and a support plan to help them return home safely. Fear created an emotional disruption, loss of confidence in the process of testing, and nervousness. Having conversations with others in a similar situation appears to be part of the experience and helped to calm fears, with some participants talking and encouraging themselves. Fear, in this sense, is accompanied by emotions that need the involvement of others to calm the situation.

3.3 Approaches to Coping with Fear

The participants' descriptions of how they coped with their fears at the quarantine centres were diverse. Their strategies were linked to emotion, problem and appraisal-focused coping. The participants stated that they withdrew from the health professionals whenever they heard more people had tested positive at the quarantine centre. Their withdrawal was in the form of not physically interacting with others and locking themselves in their rooms. Psychologically, they moved away from all the events in the centre. Again, the participants reported coming together every morning to pray, share the word of God and engage in jokes to cope with tension and fear. They did this because they found it difficult to relax in a tensed and "toxic" atmosphere like the quarantine centre.

Attempts to distance themselves from activities at the quarantine centre involved listening to non-COVID-related news, listening to religious music

and reading religious books. These activities helped them to relax and to create a positive mindset. This time of relaxation and reflection appeared helpful to the participants and allowed them to distance themselves from fearful emotional events. Emotion-focused coping dominated the participants' stories. This involved changing their emotional reactions and socially demonstrating a positive attitude. The participants said that at some point they had to suppress their emotions to show that they were on top of events in the centre. The suppression of fear was important to show that they were adults and had accepted events at the quarantine centre. For example, one participant, Paul said:

> "I had to be strong mentally. I had to show maturity and walk about feeling positive. The whole situation was overwhelming but I have to show I am a man by demonstrating bravery. I read books and stopped watching television to avoid hearing news about COVID-19" (Paul, 30 years, male).

The participants said that they used techniques, such as taking deep breaths and wringing fingers as a way to suppress their fears before their test results were read to them. This helped them to show that they were strong and could adopt the culturally accepted emotional behaviour, especially the men, who are not supposed to show signs of weakness in a difficult situation. Again, this helped to reassure them that they would be fine and should show self-confidence rather than express fear. In the participants' stories and descriptions, they demonstrated deep acting techniques. This was seen as important when dealing with the difficulties they encountered under quarantine. For example, Janet said:

> "When the health professional called me, I said to myself, "calm down you are going to be fine" I prayed in my head a lot for a positive test result. I did not know what illness will accompany those results. I took a deep breath but was sweating and I said to myself I can handle this" (Janet, 53 years, female).

4. DISCUSSION

This paper explored the participants' experiences under mandatory quarantine during the COVID-19 pandemic in Ghana through storylines [24]. The focus was on issues that gave rises to fear and how the participants dealt with their fear. The findings provide an understanding of what fear means to Ghanaians who were in quarantine due to COVID-19 and how they expressed their fears in the centres. Fear manifested in different forms, such as uncertainty about test results, unclear communication from health professionals and government officials, delay in receiving test results, experiencing death thoughts, and the fear of been stigmatised. Fear was described by the participants as existential feelings [25] because the threat of the pandemic embodied everything around them and their existence as humans. It was a feeling that involved reflecting on one's life and health alongside thoughts of death. The participants' description of fear constituted both a physiological and a psychological disturbance of their lives, with different impacts on the individuals, such as lack of sleep and anxiety, despair, uncertainty about test results, and worrying about their families, friends and own health. The participants described their experience and the environment they lived in at the quarantine centres using phrases such as 'doors were locked' and 'food placed in front of the door with no interaction'; all of these experiences appear to support what researchers describe as fear [14, 15].

In the participants' stories, important areas of threat were the uncertainty of the test results, ineffective communication from the health professionals, the government officials leading the process, and delays in receiving second test results. This made the participants doubt the process of quarantine in Ghana, and thus they described it as a failure. The participants described their experience of fear as a silent inner struggle, although they appeared physically strong and confident [25]. Interestingly, the participants' experiences were similar to previous studies during the Ebola and SARS outbreaks [26, 27, 28]. The participants saw their fear as a primary emotion of the quarantine. A common form of emotional distress was anxiety, which was influenced by the lack of effective information on the test results. Fear under quarantine and its emotions were previously mentioned as being related to worry [29, 30]. Fear was high when blood samples were taken from the participants and sent to the laboratories for the COVID-19 test, and there were delays in receiving the results. Fear was apparent on the first day at the quarantine centre when the participants did know from whom to get information (i.e. either the health or government officials). Both the male and female participants

reflected on how fearful their first night at the quarantine centre was and the fear they felt when meeting the health professionals, the next morning to answer questions on their health.

Participants attributed their fear to not only the lack of information on their test results but also other health conditions that may appear through their screening that they were unaware of. Also, they feared their existing health conditions could worsen if they tested positive for COVID-19. This study contributes to research that the earlier stages of a person's life under quarantine are associated with fear and worry due to the unknown nature of the COVID-19 virus and the environment in which the individuals are housed. What was interesting about the participants' stories was that they said much information was not provided on what to expect at the quarantine centres, which is contrary to what the government put out through the media houses in Ghana. It was clear from the media publications and the interviews that the participants were unhappy with the way things were organised and how they were received by the official at the quarantine centres. This unhappiness gave rise to worry, which resulted in a fear of dying. Studies have found that individuals often remain silent refuse to speak about the issue when they are entwined with fearful situations that they believe could lead to death [7, 23]. The reason is that they fear they may say things that may scare their friends and families, with repercussions for their community [31, 32].

Both the media publications (stories) and the interviews indicate that the participants coped well using different fear strategies. However, emotion-focused coping strategies were dominant. The participants shared their practical and emotional strategies to deal with their fear without showing that they were nervous and to show maturity. As a dominant evolutionary base emotion, fear also inspires withdrawal from others, isolating oneself and avoidance behaviour. This made the participants focus on the perceived threat and its future consequences on their health and lives. The participants highlighted their need to seek different ways to overcome their fear by engaging in non-COVID-19 related activities to feel more relaxed. Again, the participants understood that feeling afraid was part of human life, and stated the need to suppress their emotional display to be seen as emotionally resilient and mature. This, in turn, affected their emotional experience of fear. They shared the impact of having to control their emotions and display false emotions to others to meet the social and cultural norms as adults Ghanaians.

However, controlling their fears to show that they are strong and mature to the health and the government officials supporting them at the quarantine centre was both emotionally difficult and stressful. The participants demonstrated deep surface and deep acting emotions [6] as a way of changing their emotional experience. They also felt that there were no guidelines at the quarantine centre to support their emotions, and therefore made a conscious effort to demonstrate socially accepted images to show their emotional strength [10]. This implies that the participants relied on their "know-how" of emotional skills to stay at the quarantine centre and deal with their health issues. Strength, maturity and confidence were purposely used by the participants to gain control of their fears and anxiety.

The participants' acting to hide their emotions from the health professionals and the government officials (emotion control techniques) was evident in their stories, as they showed their social beliefs about fear and what the society will expect from them as adult Ghanaians in quarantine [13]. They also demonstrated surface acting emotions, meaning compliance with an acceptable display of their maturity when receiving their test results or interacting with health professionals on COVID-19-related issues. Additionally, and most importantly, the participants referred to fearful events they had experienced in the past and tried to remember strategies that had helped them in such situations. This enabled them to demonstrate a positive attitude in front of the health professionals, an act attributed to high emotional intelligence [15, 33].

The findings show that the WHO guidelines on quarantine were partly met. For example, quarantine was a priority policy for the government of Ghana during the COVID-19 pandemic, attracting all the necessary technical and financial resources. Authorities also provided the basic amenities, such as food, water and settings for infection prevention and control. However, using the framework to synthesize the information from the interviews provides sufficient room to suggest that some of the protocols were not adequately adhered to. For example, it appears that there was no adequate preparation before the implementation of the quarantine protocols, while there was ineffective communication on the need for the quarantine in

the initial stages. Doors were locked and food was not properly served to the participants. These constituted environmental challenges that affected them. From the analysis, it could be concluded that health professionals failed to provide physical protection or social and psychological support to those affected, and the health of those quarantined was not adequately monitored.

5. CONCLUSION AND IMPLICATIONS

Evidence from this study on fear under quarantine due to suspected COVID-19 in today's Ghana is also globally relevant. More attention needs to be paid to individual fear under quarantine and its impact on health and well-being. Fear of uncertainty about test results, unclear communication and experiencing death thoughts were all seen as etiological factors for fears under quarantine, leading to harmful physiological and psychological consequences. However, when the participants adopted a strategy of resilience, maturity and self-assurance under quarantine, their fear was reduced. Health professionals' practical demonstration of clear communication processes is important as this will help to reduce the fear of individuals under quarantine due to COVID-19. Also, the government officials together with the health professionals leading the COVID-19 communication need to develop clear and robust monitoring systems considering the fearful nature of the COVID-19 pandemic and its impact on individual lives.

In terms of the individual experience during the outbreak of disease (pandemics), studies have focused on SARS and Ebola as the most recent pandemics. This study contributes to the literature on individual emotions during pandemics by adding to the research on the nature of distinct emotions. The implications of this study propose that the use of IPA as a way of learning about individuals' fear emotions when under quarantine due to COVID-19 can provide insight into the main concerns of people's emotions and their nature, especially in global crises such as the COVID-19 pandemic. We argue that a detailed understanding of COVID-19 quarantine-specific emotions will help create a mirror image of emotions in other emergencies and under different circumstances.

6. LIMITATIONS

The findings in this study provide an insight into the process of COVID-19 quarantine in Ghana and its implications for policy and practice. However, it is not without limitations, and some of these must be recognised. The most obvious limitation is the number of participants. Participants were not willing to take part in the study due to the fear of being stigmatised. Furthermore, the research was conducted with participants from Ghana, which made it country-specific. Thus, caution must be taken when trying to generalise to other contexts and countries, although the participants' experiences and stories may be transferable.

CONSENT AND ETHICAL APPROVAL

The issues of ethics and participant consent were adhered to in this study. Researchers also adhered to high moral and ethical values, thus ensuring the protection and promotion of the rights of all the individuals involved. The aspect of confidentiality was also given the highest attention. In this case, the identities of the participants were not disclosed to other people, and their names were also anonymised.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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