
# UNDERSTANDING EFFECTIVE RISK COMMUNICATION IN THE CONTEXT OF CORONAVIRUS DISEASE (COVID-19) IN GHANA.

**BY**

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## DECLARATION

I hereby declare this research as original towards the award of Degree of Master of Arts in Development Communication. Published and unpublished materials used in this research work have been duly acknowledged in the text.

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## DEDICATION

I dedicate this work to Almighty Allah for being merciful to me to complete this work successfully as well as Mr. Kofi Amponsah-Bediako, and all my friends and family.

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## ABSTRACT

***Background***: In the era of public health crises, the public experience fear and panic, hence the need to communicate to the public to reduce these fears and panic, and turn them into positives to empower the public to take actions to mitigate the risk (CDC, 2014) but effective risk communication is very key in the midst of critical situation to prevent public outrage.

Ghana had two confirmed cases of COVID-19 on the 12th of March, 2020 after WHO declared COVID-19 as pandemic, with the origin of the disease from Wuhan in China. Meanwhile, Ghana had many suspected cases in early February, 2020. The Ministry of Health (MOH)/Ghana Health Service (GHS) used and is still using press releases, press briefings, jingles, text messages and others to communicate risk to the Ghanaian population but it appeared there were uprising COVID-19 cases in some communities and institutions like Obuasi, Tema fish processing factory, BOST, COCOBOD and others. This study intends to gain in-depth understanding of effective risk communication in the context of COVID-19 in Ghana.

***Methodology***: There was ethical clearance before the research started. The research geography was Ghana, with about 30million people. Secondary online/soft copy data from credible institutions/organizations and academic papers were collected purposively and conveniently, reviewed and critiqued, from January to July, 2020. Some of the target institutions were MOH/GHS, WHO, CDC, and UNICEF because they are key players in the medical fraternity. Exploratory and descriptive research approaches were used to understand and determine the behavioural patterns of Ghanaians in the COVID-19 risk communication.

***Findings***: High incidence of Community or institutional-based infections, Community agitations, discovery of some peculiar features of COVID-19 risk perception such as faith thoughts like 'sinners' disease as a punishment for homosexual practice from the Supernatural Being, no known risk messages for vulnerable people like persons living with mental illness and various forms of disability.

***Recommendations***: 1. **Continuity-Flighting Communalised (CFC) risk communication approach** can be used. Research into this approach can be done to assess its effect on risk communication. This approach was borrowed from advertising media strategy called continuity and flighting. The CFC approach is where the risk managers engage two or more communities frequently and concurrently over a period of time then alternate community engagement periods during follow-ups till the need to end activity.

2. Capacity building of risk managers like health workers, security personnel, risk communicators, and others should be important.

3. Engagement of development communicators or health communicators if there is none as well as language expert in the planning of Risk Communication policy to achieve all-inclusive effective risk communication (to move blind, deaf into recommended action).

4. Regular update of risk communication messages and strategies as and when new emerging evidence comes to obtain uniform content to build and maintain trust with the publics, and post incident review guidelines document should be a priority.

# CHAPTER ONE

## 1.0 INTRODUCTION

This chapter highlights on the background of study, research objectives, research questions, justification, and significance of study as well as organization of study.

### 1.1 Background

Ghana is seen as one of the most stable countries in West Africa since the transition to multi-party democracy in 1992 (https://www.bbc.com, 2018), hence the name "**Island of Peace**" (https://www.ghanaweb.com, n.d.). Ghana shares boundaries with Togo to the east, La Cote D'Ivoire to the west, Burkina Faso to the north and Gulf of Guinea to the south.

The three pillars of Ghana's economy are Gold, Cocoa and most recently, the oil discovered (https://www.bbc.com, 2018). The current population of Ghana is 30,993,199 as at May 19, 2020 (https://www.worldometers.info, 2020). The capital of Ghana is Accra. The country consists of different ethnic groups, with the dominant group being the Akans who mostly speak Twi. However, the official language is English. Ghana has an area of 238,533 sq. km, and the dominant religions are Christianity and Islamic. The life expectancy is 64 years for men and 66years for women (https://www.bbc.com, 2018).

Pre and intra outbreak of disease, there is fear and panic from the public which makes it is very important to communicate to the public, in order to reduce the negative psychological impact and turn them positively to empower the public to take actions which can reduce the risk of harm (Centre for Disease Control & Prevention [CDC], 2014). However, if there is no effective communication in the midst of a critical situation as a result of something causing the delays or misinformation, this may lead to public outrage. The public now are

'information society' who are always hungry for information, hence if there are no regular updates, and there is lack of credibility on the side of the government too, the citizens resort to other sources for any information which can do more harm than good to mitigate the situation (National Centre for Disease Control et al, 2016). It is reported that, risk information seeking has linkage with preventive behaviours and improved coping mechanisms (Brashers et al, 2004, Carver et al, 1989 cited in Thompson et al, 2011).

Risk communication is one of the integral components of risk analysis (Pernet, 2013) and very crucial in risk management because it helps to identify and understand risks, to know and define roles in terms of monitoring, reducing and mitigating risk as well as recovery (Sato, 2015). Risk communication is a real-time exchange of information, advice and opinions and can be seen as one of the health interventions during public health emergencies (International Health Regulations, 2005 cited in WHO, 2017). On the 31st of January 2020, the Ministry of Health (MOH) provided a real time information, updated the population of Ghana and the world at large on the state's preparedness towards the COVID-19 pandemic through a press release following WHO declaration of the disease as a public health emergency. The MOH in their press release assured the nation and outlined measures put in place such as establishment of National Technical Coordinating Committee (NTCC) to review the resilience of the current arrangements of the state to prevent an outbreak. Additionally, education on precautionary measures such as; hand hygiene etiquette, respiratory hygiene/etiquette, lifestyle modification, as well as what to do if you experience the symptoms (like coughing, sneezing, difficulty in breathing) and others were given to the general public (www.ghanahealthservice.org/covid19).

In risk communication, it is the aim of the communicator to make available necessary information about what is expected whether good or bad and the magnitude of the outcome from a behaviour or exposure, and this will help the individual to make an informed decision that will protect and promote the individual's health and the community as a whole (CDC, 2014).

On the 6th of February 2020, the MOH through a press release, updated the state again on the current situation in Ghana. The MOH introduced the update with an overview of the global situation at the time and proceeded to inform the public that as at that time, Ghana had 9 suspected cases including 2 suspected cases from Korle-Bu Teaching Hospital and all tested negative. The citizens were assured on the efforts made by the Government of Ghana to prevent and protect against the importation of the virus, and advised the public to continue to remain calm. Regularly, the MOH updated the Ghanaian population and the globe as well through twice weekly press briefing and on a special website designed for only COVID-19 updates (www.ghanahealthservice.org/covid19).

According to Gamhewage (2014), risk communication can be explained as "the two-way and multi-directional communications and engagement with affected populations so that they can take informed decisions to protect themselves and their loved ones". Ghana had two confirmed COVID-19 cases on the 12th of March, 2020 which was announced by MOH through press release and press briefing organised by the Ministry of Information (MOI). These actions confirmed almost all the six principles of effective crisis and risk communication, that is, MOH was the first to communicate, give accurate information, establish credibility, express empathy and promote action (CDC, 2014). Again, on the 20th of March, 2020, Ghana confirmed three (3) cases of community infection, all from Greater

Accra region (www.ghanahealthservice.org/covid19). Meanwhile, the total confirmed cases as at 25th May, 2020 was 6,808 with 2,070 recoveries and 32 deaths while globally, confirmed cases as at 24th May, 2020; 15:00 GMT was 5,206,614 with 337,736 deaths (WHO dashboard, 2020, GHS dashboard, 2020).

In a televised national broadcast on the 10th of May 2020, Nana Addo Dankwa Akuffo-Addo, the President of Ghana hinted that one (1) person infected five hundred and thirty-three (533) persons at a fish processing factory at Tema (www.presidency.gov.gh). During the Minister's press briefing held on Tuesday, May 19, 2020, Dr. Franklin Asi Bequine on behalf of Ghana Health Service (GHS) explained that the current uprising of confirmed cases at Obuasi in the Asante Region and Tema in the Greater Accra Region were as result of the violation of the precautionary protocols. According to Dr. Bequine, in the case of Obuasi; the community members did not wear face mask, there was no treatment facility and the community is densely populated but in the case of Tema, 693 tested positive at the fish processing factory. The findings of the investigations were that; the number of employees exceeded the work space within the factory, social distancing at the work was a challenge, the factory has a work bus for conveying all workers without observing social distancing, and there was a canteen for communal eating without observing social distancing protocol and several among others. Also, the factory has only one entry point where one has to use a card to gain access through the gate (Ministry of Information-Ghana Facebook wall, 2020). Meanwhile, risk communication messages started since January, 2020.

Furthermore, some communities rejected the offer to have isolation or treatment centres established within their localities. For instances, the use of Ghanaman Soccer Centre of

Excellence at Prampram in the Greater Accra Region, Aggrey Memorial Zion Senior High School at Brafoyaw in the Central Region and a 100-bed capacity facility released by Bishop Titi-Ofei (General Overseer of Pleasant Place Church) at Baatsona, Accra. This is because the community felt that those facilities would be a threat to their lives (https://citinewrooms.com , 2020).

It seems most citizens as well as communities and factories are not complying with the precautionary protocols to contain the disease although almost all the principles of effective crisis and risk communication have been observed by the MOH/GHS but respectful communication to improve relationships to promote cooperation and rapport, as well as to build trust (CDC, 2014, Administration (FDA), 2011 cited in Gamhewage, 2014) may be the major challenge. Treating the publics with respect during public health emergencies is very key in effective risk communication (Fischhoff, 1978 cited in U.S. Department of Homeland Security, 2012). This study intends to gain in-depth understanding of the strategies and rules of effective risk communication in the context of COVID-19 in Ghana and recommend what may best suit the situation.

### 1.2 Objectives

The main aim of this long essay is to review existing literature on risk communication and determine the current best practices and knowledge concerning risk communication in the context of coronavirus disease (COVID-19). The specific objectives include:

1. To gain deeper understanding of definitions, theories, concepts and principles of risk communication in the context of public health emergencies in the academic and practical settings.

2. To determine the peculiar features of risk perception in relation to COVID-19 and its implications for COVID-19 risk communication.
3. To assess all available practical materials and guides for public health emergencies as well as draw lessons from the practices of risk communication in the context of public health emergencies, paying more attention to COVID-19.

### 1.3 Research questions

1. What is the meaning and principles of risk communication in public health emergencies academically and practically?
2. What are the special features of risk perception related to COVID-19 and its implications for COVID-19 risk communication?
3. What are the existing practices and principles of risk communication in public health emergencies, and the lessons that can be learnt from the practices of risk communication in the context of COVID-19 for future informed policy decision?

### 1.4 Justification

A person with COVID-19 infected 693 people within the fish processing factory at Tema because the precautionary protocols were not observed (President Nana Addo, Ghana, Dr. Franklin Asi Bequine, GHS, 2020) while all the protocols have been communicated earlier. Also, some communities rejected the offer to have isolation or treatment centres within their localities such as the use of Ghanaman Soccer Centre of Excellence at Prampram in the Greater Accra Region, Aggrey Memorial Zion Senior High School at Brafoyaw in the Central Region because the community felt that those facilities would be a threat to their lives (https://citinewrooms.com, 2020). This study will help to identify the unique features of risk perception related to COVID-19 among individuals, within the community and

industries and its implications for COVID-19 risk communication so that lessons learnt can be used for future informed policy decision.

### 1.5 Significance of Study

This study will help to identify the unique features of risk perception related to COVID-19 as well as its implications for COVID-19 risk communication to guide future policy decision making during public health emergencies. The affected population have the right to be informed about the health risks and understand those risks they are likely to encounter as well as their beloved ones, hence, risk information creates that opportunity for the affected population to be actively engaged in the response process (IFRC, UNICEF & WHO, n.d.). This makes recipients obtain accurate information and encourage specific needs adoption of preventive behaviours to mitigate the adverse effects (Savoia et al 2013). This can help the affected population to understand the risks associated with COVID-19, and the benefits of adopting preventive behaviours to make conscious informed decision to limit the negative impact of the situation, and promote cooperation and build trust (CDC, 2014, Administration (FDA), 2011 cited in Gamhewage, 2014).

Risk communication helps to improve decision making, community understanding and compliance with expected behaviour for preventive actions (National Centre for Disease Control et al, 2016). In the absence of risk communication, the affected population flee from the health crises, health workers fail to do their expected duties which can lead to a lot of health care system stresses (National Centre for Disease Control et al, 2016). Moreover, human behaviour in an emergency is influenced by risk perception and risk attitude (Rohrmann, n.d). The level of people's judgements and assessment of dangers they or their environment may be exposed to as well as their intentions to assess the risk situation

(Rohrmann, n.d) which can result in “epidemic of fear” in which they (people) think their environment is likely harmful, and there might be widespread of disease from friends, loved ones to others (Abraham, 2009). This ‘epidemic of fear’ is a normal compensatory mechanism when there is danger but when you cannot predict the end time of the danger (in this case, COVID-19), the fear becomes chronic and onerous (Mertens et al, 2020) which can suppress the innate and adaptive immune responses through the alteration of the cytokine balance, affecting the functional state of the immune-protective cells (Dhabhar, 2014 cited in Seiler et al, 2020). Risk communication helps to reassure the public to reduce or manage anxiety and fear to mitigate the situation (Gamhewage, 2014).

### 1.6 Organisation of the study.

This study is organised into four (4) chapters.

Chapter one introduced you to the study.

Chapter two reviewed literature works of other researchers.

The Chapter three looked at the research methodology used for the study, and Chapter four concluded the study with recommendations as well.

# CHAPTER TWO

## 2.0 LITERATURE REVIEW

This chapter looks at the theoretical and conceptual framework of effective risk communication, review and critique other literature works in the context of COVID-19 and situate it to the Ghanaian context, with conclusion on the benefits of the literature review to the research.

### 2.1 Theoretical and Conceptual Framework

### 2.10 Concepts of Risk, Risk Perception & Communication.

#### 1. Risk

The term 'Risk' was first introduced in the fourteenth century so that the Italian Merchants would be able to cope with the losses of their ships (Hampel, 2006 cited in Qiu et al, 2016). This term was derived from French word 'risqué' which means 'danger' (Alexandru, 2019). Risks can be conceptualised as events, consequences and uncertainties (Aven, 2011). Judgement making about a situation is dependent on description and classification of the risk (Aven, 2011). Poor quality information about actual situation at hand can create uncertainty which can be the source of risk (Alexandru, 2019). In recent times, it seems to be a paradigm shift from risk and probability to uncertainty and hazard. The potential effect of a situation (process or product) can be explained as Hazards but Risk can be described as the real chance (in some cases expressed as Probability) of something happening, depending on the rate of exposure. Our actions or activities may expose us to hazards, and how we do our activities and how often we do the activities determine the risk (Durodie`, n.d.). According to Durodie` (n.d.), uncertainty is 'the difficulty of knowing what may

occur in advance of experience'. The focus now is on people's perceptions of risk rather than the actuality of the dangers the people face which has led to the desire to prioritise hazards and uncertainties than the conscious ability to deal with the risk and determine the possibilities (Durodie`, n.d.). On the other hand, there is no uncertainty when it comes to risk, 'it is a known known' in a sense that for one to classify something as a risk, that person needs to know something about that thing (Mosaic white paper, 2011) but Mosaic white paper (2011) admitted that 'risks are uncertainties that matter' in context of beneficial or detrimental. The beneficial ones are the "**reducible uncertainty**" in which the risks can be mitigated through the use of money, change of plans and/or having alternatives. This type of uncertainty is related to lack of knowledge about the situation at hand, hence ***epistemic*** (Mosaic white paper, 2011). Knowing more about the situation helps to mitigate the risk but the risk that has detrimental effects is the "**irreducible uncertainty**" where the risks cannot be mitigated with adequate knowledge because the risk is part of the naturally occurring process, hence ***aleatoric*** (Mosaic white paper, 2011).

When people are less connected, they become less corrected which bring their subjective impression about the world into reality, and this has negative impact on how they (people) see themselves and the world at large (Durodie`, n.d.). The key to management of uncertainty is probability (Bernstein, 1996, 0'Doherty, 2006 cited in Bartesaghi et al, 2012). Research done by Bartesaghi et al (2012) for the banking, computer science and natural disasters to share their understanding of risk brought out that risk was internally constructed, however, risk is seen as extrinsic to the communication process.

Risk can be an unwanted situation or the cause of the unwanted situation or the probability of an unwanted situation or the statistical expectation value of unwanted situation which is

likely or unlikely to occur (Hanssson, n.d.). The concept of risk can also be the decision made under the situation of known probabilities which Hanssson termed as 'Decision under risk' (Hanssson, n.d.).

Risk as endogenous to social interaction does not hold participants (in this case affected population) accountable for creating uncertainty but the risk itself is not dynamic among the affected population in state of uncertainty (Bartesaghi & Castor, 2009 cited in Bartesaghi et al, 2012).

Risk can be "**known unknowns**" which means that you can predict or foresee based on available information or experience but do not know the extent of the consequences of risk (Mosaic white paper, 2011). This helps to relatively assess the effectiveness of risk mitigation activities (Mosaic white paper, 2011). The "**unknown knowns**" risks are the risks we know but we are unaware of those risks which may be undiscovered, and have impact on the risk communication (Mosaic white paper, 2011). In the instance of "**knowable unknowns**" risks, the risks are basically knowable but due to process failure or lack of skills or inappropriate insight, those risks are not given attention in the risk management process (Mosaic white paper, 2011). However, these risks can be foreseen if sufficient skills and care is applied to the situation. The most important indicator of effective risk management is to identify the risk, and this helps to know the tools to manage that risks (Ibid). In certain situation, the risks are "**unknowable unknowns**" where we do not know anything about the risk, hence impossible to predict or foresee. Here, the advantage is that it helps to develop a resilient strategy to respond effectively after the event occurs (reactive strategies) (Ibid).

Some people believe the myths that; risk should have a single and well-defined meaning, severity of risk can be determined by the probability (that is the severity of the outcomes), weighing the whole risk against the whole benefits can give you informed decision on risk, assessing risk should only be supported by well-established scientific facts, and that it should be only experts who should take decisions on risk instead of laymen (Hanssson, n.d.).

**2. Risk Perception.**

Risk perception can be explained as the affected population's judgement and evaluation of environmental dangers they are likely expose to, which are based on experiences, media coverage and /or beliefs (Rohrmann, n.d., Slovic, 2016) and in some instances, age: there is most popular held undefended belief that adolescents are not vulnerable, thus undertake high risk behaviours (Bodemer & Gaissmaier, 2015, pg. 17) due to the perception that their likelihood to die is in the near future when they (adolescents) are exposed ( Fischhoff et al, 2010 cited in Bodemer & Gaissmaier, 2015, pg. 17). One's acceptability of risks is guided by the risk perception, thus major influence on the behaviour of the affected population pre, intra and post public health crisis but these perceptions should not be used to predict the actual behaviour (Rohrmann, n.d). People's judgement on technology-induced risks are more negative than natural risk (Ibid).

Slovic (2000) cited in Sheppard (2012) opined that for experts to have baseline understanding of the affected population's perception of risk, it is crucial to first identify those risk perceptions, characterise those identified risk perceptions, and quantify them to actualise the risk, which Slovic termed as 'Psychometric Paradigm'. There are two (2) key risk characteristics, namely; the degree of dread associated with risk and the public's

familiarity with risk. Lower familiarity/Lower dread is when the affected population have less knowledge about crisis but perceive that the risk associated with crisis are unlikely to be life threatening or cause serious injuries but as time goes on, those life threatening manifest. There are instances where individuals perceived risk is greater than the actual risk, hence may overreact although experts' judgement may prove that risk is minimal or unlikely (Rogers et al, 2007 cited in Sheppard, 2012, pg. 6) but Seeger et al (2018) seemed to argue that when the risk perception of the affected population is higher than the actual risk, it produces the expected recommended actions. Lower familiarity/higher dread risk has unknown, delayed and become part of the environment for years, this poses a communication challenge in informing the public. This is because it is difficult to interpret to gain the understanding of the target audience (Rogers et al, 2007 cited in Sheppard, 2012). The Higher familiarity/Lower dread risk event emphasized that through personal experience and exposure to media coverage, the affected population is more likely to have overview understanding of the risk. This can lead to better response to the recommended actions through the use of warnings because the impacts of risks are observable (Mileti & Sorensen, 1990, Slovic, 2000 cited in Sheppard, 2012, pg. 6). On the other hand, these risks have involuntary fearful attributes which can lead to deaths. Higher familiarity/ higher dread risks are life threatening, lack warning and less observable. However, the affected population are more likely to understand those risks and embrace them if they occur (Sheppard, 2012, pg. 6).

Actual risks are expert's judgement based on calculations of probabilities and consequences from theoretical assumptions and mathematical model, which are more objective (Shrader-Frechette, 1990, pg. 342). On the contrary, Shrader-Frechette (1990, pg.

345) asserted that ‘all risks are perceived although they are not wholly relative’. This is because sometimes risk probabilities do not reflect the risk frequencies, some of the risks are unchangeable to quantification, and also, risk calculations are theoretical assumptions which cannot give exact prediction (Ibid, pg.348-349).

**Theoretical framework and Factors in Risk Perceptions.**

**Social Amplification of Risk Framework (SARF)**; The SARF states that if decision makers fail to consider the social context of the risk in the decision-making process, and preparation as well as transmitting of the risk messages, the target population is likely to overestimate the risks (Sheppard, 2012). This seems to suggest that the social or cultural or psychological factors and others can shape the public’s risk evaluation, interpretation and response process during the information dissemination (Sato, 2015). This model aims at identifying these social factors that increase or decrease the perceived risks of the publics so that risk communicators can develop contextual risk messages to move the public into recommended action (Sheppard, 2012) without compromising that ‘ripple effects’ which play a significant role in amplifying/attenuating the risk-response behaviours which is likely to trigger secondary impacts (Sato, 2015, Sheppard, 2012).

**Heuristic Paradigm of Risk Perception**; This theory was induced in the 1970s by Tversky and Kahneman. The Heuristic Paradigm of Risk Perception posits that people’s make judgements based on intuition, and not from scientific facts or complete understanding of the representation of available data and findings. This judgement may produce cognitive biases which can lead to inaccurate judgement (Sato, 2015).

**Cultural Theory**; It was propounded by Mary Douglas and Wildavsky in 1982. This theory argues that people perceive risks based on their culture. Formation of schema about the world like egalitarianism (technological & environmental risks), fatalism, hierarchy (social deviations), individualism (wars) is as a result of culture which has influence on one's risk interpretations. Additionally, studies showed that ethnic background has influence on one's risk interpretations of an event (Morrow, 2009, pg. 16).

**Knowledge Theory**; This suggests that one perceived danger based on his or her level of knowledge of danger.

**Personality Theory**; It emphasizes that the intrapsychic and interpersonal features have influence one's risk decision behaviours.

**Political Theory**; The political theory tackles the differences in risk perceptions in the social and political context.

**Economic Theory**; It asserts that people with higher economic status are more likely to benefit from new technology, hence more willing to accept related risks than those with lower economic status. However, "post materialist values" are more concerned about the social harmony, cohesion and environment than technological-related risk benefits.

**Network Theory of Contagion**; This theory considers social network/group as an influential tool on one's risk perception. It argues that there may be formation or sharing of similar individual perception of risks among members within a social group.

Morrow (2009) pointed out that Sandman (1987) argued that the two key determinants of perceived risks are "hazard" and "outrage". Outrage are the emotions and reactions towards

the event and the related issue. It was asserted that the greater the outrage, the greater people feel at risk (Sandman, 1993 cited in Sato, 2015). Factors like dread/fear, avoidability & controllability, expert knowledge, personal knowledge, educational level, and age have significant effects on people's risk perception (Chaswa et al, 2020, pg. 1).

**3. Communication**

Communication can be explained as the act of transmitting information and common understanding from one person to another (Keyton, 2010 cited in Lunenburg, 2010). Communication is originated from the Latin word; Communis, meaning Common. It can be deduced that there should be common understanding from the exchange of information before it can be said that there is communication (Lunenburg, 2010). In the view of Rogers cited in https://pdf4pro.com>cdn>c...pdf (n.d., pg. 2), 'Communication is the process of transmitting ideas, information, and attitudes from the source to a receiver for the purpose of influencing with intent'. For communication to take place, there must be a sender, encoding the message, transmitting the message through a medium, receiving the message, decoding the message, feedback, and noise (Lunenburg, 2010, pg. 10) but Keyton (2010) cited in Lunenburg (2010) pg. 3 opined that when there is a problem with any of this communication process, it affects the quality of communication. Lunenburg (2010) went further to reiterate that communication can only be two-way if there is feedback which is more desirable.

Information that seem to favour one's own beliefs, needs and values are more likely apprehensible by individuals (Keyton, 2010 cited in Lunenburg, 2010 pg. 2). Apart from the process barriers, there are other types of barriers that reduce the effectiveness of communication. For instance, wrong choice of media as a physical barrier can bring

distance barrier between people. Also, technical terminologies such as respiratory etiquette can be semantic barrier for common understanding of the message by individuals. Nevertheless, psychosocial barriers like lack of sincerity, empathy, self-perception, role-perception, the inability to communicate, culture, noise, lack of listening skills and others can affect the quality of communication (Lunenburg, 2010 pg. 4-6). Additionally, https://pdf4pro.com>cdn>c...pdf (n.d., pg. 3) explained that interaction (that is creation of connection between the encoder and the decoder) and the social context in which the communication occurs can influence the quality of the communication. In the work of Velentzas & Broni (n.d.), attitude can be a barrier to effective communication when the decoder has entrenched attitudes and ideas. Active listening through message content, feelings, clarification of ideas before communicating, consider the tone of message, consider all the possible barriers and consult others in communication planning process may yield effective communication (Lunenburg, 2010 pg. 6-8).

**4. Concepts of Risk Communication**

In risk communication, information is not the main product but the quality of the social relationship it supports such that societies will shift from the technical understanding of the situation to the understanding that property, wealth, and lives may be at stake (Otway, 1992 cited in Bartesaghi et al, 2012). World Health Organisation [WHO] (2017) defined risk communication as "the real-time exchange of information, advice and opinions between experts, community leaders, officials and the people who are at risk and is an integral part of any emergency response". Risk communication may take the form of persuasive and compelling evidence, with the aim of preventing /modifying specific behaviours and practices, and by so doing, addressing almost always likely consequences

(Bourrier & Bieder, 2018). For risk communication to be effective to prevent or modify specific behaviours, it must be structured as a two-way process where both experts and public respect the insights and intelligence of the other (Slovic, 2016, pg. 285).

One purpose of risk communication is to address what is known as well unknown about a situation (Ibid). Risk communication conceptual framework focuses on two main areas, namely; the message development and dissemination process, and the communication outcomes on audiences (Seeger et al, 2018).

In the process of risk communication concept, messages should be science-based and accurate because there is mostly evolving and uncertainties in information dissemination, which can cause public distrust and reduce the source credibility. Centre for Disease Control and Prevention (CDC) (2014) cited in Seeger et al (2018) asserted that as scientific knowledge on disease at hand increases, there is change in recommended safety actions, hence, it is important health communicators constantly subject the message to scientific review to check the accuracy of the message content. Also, source credibility, and trust help to prevent or modify specific behaviours and practices but this is achievable if the message is open and transparent to the key audiences. Openness and transparency in this context refer to providing truthful information timely, and accessibly, as well as admitting uncertainties, including what is not known yet. This promotes understanding of the message and increase trust (Ibid).

Furthermore, messages should be clear such that lay audience can easily understand and share because in times of public health crises, affected population undergo stress which reduce their capacity to process the information. Wray et al (2008), Fish et al (2017),

Sugerman et al (2012) cited in Seeger et al (2018) asserted that messages framed using plain language are possibly clear to be understood which has the higher probability to increase compliance by adhering to the safety protocols.

Additionally, tailored messages increase understanding and adherence to recommended safety behaviours (Crouse, 2008, Ruggiero et al, 2013 cited in Seeger et al, 2018). In drafting a message, it is very necessary to check the information needs, cultural preferences and existing knowledge of the target audiences which promote compliance and trigger recommended actions.

Last but not least, consistent messaging, message sufficiency, actionable messages, timely dissemination of messages, increased exposure and awareness, reduced uncertainty through enhanced knowledge and through multiple channels are important process elements in the development and dissemination of messages during public health emergencies. Most affected population are more likely to compare messages across different sources, thus, it is important to employ uniformity in message content but not exactly the same to reduce the level of uncertainty but increase public trust. Message sufficiency is the quantity of information one perceives to need to address a given risk. During risk communication, it is very necessary to use the 'sufficiency threshold' to determine if the affected population are satisfied with the information they need about a given risk. If the affected population's information needs are not met, they are more likely to use other alternatives to meet their needs (Seeger et al, 2018). Actionable messages move the affected population into specific actions such as wash hands frequently with soap under running water for 30seconds, cough into your elbow or tissue and discard into bin immediately, and wash hands or rub hands with 70% alcohol-based hand sanitizer. In times

of public health emergencies or pandemics, it is vital to disseminate messages timely to increase trust with the affected population. This is because the people perceived there is transparency which promotes safety actions behaviours. The target audience use so many platforms to obtain information, hence the need to use multiple channels to increase reach and frequency (Ibid).

Risk Communication Evaluation (RICE) can be used to measure the communication outcomes during public health emergencies at different levels such as information environment, the affected population and the health system (Savioa, Lin & Gamhewage, 2017 cited in Seeger et al, 2018).

The communication outcomes help to measure the impact of risk communication messages on the target audiences. Reach of messages, increased information seeking and sharing, and aligning risk perception with the actual risk, increased self-efficacy and behaviour change are some of the communication outcomes (Seeger et al, 2018). The number of receipts of a message at a given time helps to determine the reach of message. For a communicator to get higher reach, multiple channels should be used so that the message is not limited to a small section of the affected population. Diffusion of the message operates like the product life cycle in marketing, where the message starts to grow, matures and declines at end of the distribution. When recipients seek for more information, it is possible that they are likely to change behaviour. The ability of one to have confidence that he or she can practice the approved behaviours can be explained as Self-Efficacy. Studies showed that self-efficacy is an important element of behaviour change in health, hence the need to increase self-efficacy through enhanced knowledge. Alignment of perceived risk with actual risk is one of the important risk communication outcomes.

Affected population may adhere strictly to safety protocols if their perceived risk is higher than actual risk but if their (affected population) perceived risk is lower than the actual risk, they are likely to throw away the safety protocols. For behaviour change to be achieved as the overall goal of risk communication, all the above strategies such as reach of messages, increased information seeking and sharing, and others must be effectively implemented (Ibid).

In a bid for risk communicators to communicate risk to the vulnerable population to prevent/modify specific actions and behaviours to contain the spread of disease, it is essential to have in mind that one goes through four (4) stages when learning any new information. These four stages include; unconscious incompetence, conscious incompetence, conscious competence and unconscious competence (Trudeau, 2004, pg. xiv-xv). The unconscious incompetence is where you are unaware that you do not know. The conscious incompetence when you are aware that you do not know but the conscious competence is the stage where one is aware that he or she knows but has to think about it consciously. Lastly, unconscious competence is when the information is part of you such that you can easily recollect it (that is unconsciously think about it).

### 2.11Theoretical framework and approaches of Risk communication.

**Theoretical background**: The phrase 'Risk Communication' was first coined in 1984 as a result of the rose of disparities between risks assessed by experts, and public understanding of risks. Risk communication seeks to improve the quality of dialogue about risk from the expert's perspective and the understanding of the general public, and use this improved dialogue to mitigate the environmental and health risks (Leiss, 1996, pg. 86).

In the field of risk studies, Baruch Fischhoff (1995) can never be forgotten with the discovery of the seven (7) evolutionary stages of risk communication and best practices (Leiss, 1996, pg. 87). These include the following;

1. "All we have to do is get the numbers right".
2. "All we have to do is tell them the numbers".
3. "All we have to do is explain what we mean by the numbers".
4. "All we have to do is to show them that they've accepted similar risks in the past".
5. "All we have to do is to show them that it's a good deal for them".
6. "All we have to do is treat them nice".
7. "All we have to do is make them partners".

Community-based social marketing (CBSM) is one of the best practices of risk communication considered to promote risk-related behaviour change (Morrow, 2009, pg. 5). The CBSM approach involves the community collectively to share and experience risks together. It is not uncommon that people seek for information and guidance using their trusted social networks, hence community interaction is an effective way to promote recommended behaviours (Ibid).

For this strategy to work effectively, it is important to "know your audiences", "target your messages to specific stakeholders", "focus on a specific behaviour", "use a positive approach", "begin with the easiest audience and use them to change social norms", give the least amount of message needed, use the skills they already have to deal with uncertainty as well as "build trust" (Morrow, 2009, pg. 6).

**Risk Communication theories and models.**

During the environmental and health crises, there are three risk phases such as preparedness, response, and recovery which have major effect on the risk communication process. These risk phases will be discussed from the theoretical point of view as well as the principles of risk communication and best practices.

**Situational theory of Publics (STP)**; this theory was developed by Professor James E. Grunig in 1966 to give the meaning of Public. It can be seen as market segmentation theory in marketing because the theory categorised the general population into active communication behaviour (information seeking) and passive communication behaviour (information processing) publics. This theory is situational because problems come and go, and are only significant to those who experienced the problem, hence as the situation changes, publics arise and disappear (Grunig, 2005, pg. 778). The STP helps to understand the affected population and predict their behaviours (Aldoory & Sha, 2007 cited in Sheppard, 2012) because one is able to identify the publics, recognise the constraints, determine the level of involvement, and develop achievable short- and long-term communication objectives as well as evaluate the communication outcomes (Grunig, 2005, pg. 778-779).

**Crisis and emergency risk communication (CERC) model**; this model was amalgamation of theories and practices in the work of many professionals such as Dr. Peter Sandam and Dr. Vincent Covello. The CERC model emphasized that the risk messages, warnings and guidance should be stage specific and directed to the specific needs of the key publics (information seeking & information processing) (Reynolds et al, 2002). This

model also prioritises feedback from the target audience to help determine what needs to be done to improve the risk communication.

**Heuristic-Systematic model (HSM);** HSM was propounded by Shelly Chaiken in the early-to-mid 1980's. This model explains how publics are persuaded by risk messages which are influenced by heuristic processing and systematic processing (Chen et al, 1999). Trumbo (1999) & Griffin et al (2002) argued that publics process the risk information systematically by scrutinising and comparing the information from the media and other sources but use superficial cues like use of colour, visuals, source expertise as well as beliefs and attitudes to easily make judgements about practicing healthy behaviours. This means that information sufficiency, motivation and self-efficacy are determinants in information processing and making judgement. Trumbo (1999) further asserted that greater motivation can predict the information processing of a target audience (systematic processing) while information sufficiency can predict the judgement level (heuristic processing), and the self-efficacy is an important predictor for HSM. Chen et al (1999, pg. 44-45) emphasized that sufficiency threshold is a key motivator in the processing of information to make decision. When the public reaches the sufficiency threshold, the public will discontinue the information processing and make judgement but when the sufficiency threshold is unmet, the public will continue processing the information. Sufficiency threshold is the point at which the public's motivational needs are met by the desired level of confidence of the public (Alarcon et al, 2017). Chaiken & Ledgerwood (2012) hinted that the systematic processing and heuristic processing can be relatively open-minded, strongly motivated by accuracy, or relatively biased, strongly motivated by defense or impression to reach the sufficiency threshold.

**Deliberative Process model**; this model emanated from the principles of "deliberative democracy" coined by Joseph M. Bessette in 1980. The deliberative process model best works at the recovery stage during crisis. The deliberative process model believes all-inclusive deliberations among all stakeholders like government, the publics and others in the risk management decision process, hence platform should be created for mutual exchange of arguments to establish common understanding (Renn, 2003 cited in Sheppard, 2012). This helps to address any potential horizontal risk perception, and distribute the actual risks and benefits of healthy behaviours. The main objective of this model is to increase competent decision-making process and to equally assign risk management responsibilities to the affected population and other stakeholders. During the deliberative process, it is important to elicit values and criteria from the stakeholder groups, provide performance profiles for each policy option, and select citizens randomly to evaluate and design the policies (Renn, 1999). The outcome of this process helps to design risk communication messages which is appealing, and acceptable and enhance the better understanding of risk by the publics (Sheppard, 2012).

**Mental models**; the psychologist and physiologist Kenneth Craik first introduced the mental models in 1943 in his book *Nature of Explanation*. Kenneth Craik argued that people develop a framework in their mind so that they can simulate future events and make perceived important decisions before those events occur (Johnson-Laird et al, 2017, pg. 346). Sheppard et al (2012) asserted that this model helps to understand the pre-existing public risk perceptions (low familiarity/higher dread) to identify the information gaps and misconceptions that need to be addressed. With this knowledge about the publics, specific risk communication needs messages can be developed to increase awareness and

understanding of the risk to prevent or modify specific behaviours. It was also noted in the works of Sheppard et al (2012) that some publics use their past experience to make risk decisions. For instance, some individuals use the recall of first hand media reporting of risk to produce perceived feelings (experiential) but others analyse the risk to make an informed decision (analytical). Morgan et al (2002) cited in Sheppard et al (2012) outlined five processes to effectively use the mental models to guide the risk communication message development: determine the nature and magnitude of the risk through the revision of current scientific knowledge, undertake in-depth interviews to have the public's beliefs about the risk, to predict the public's prevalence of those beliefs expressed in the in-depth interviews through confirmatory questionnaire, use the results of both interviews and questionnaire to draft the risk communication messages and evaluate the communications through testing and refining of the messages within selected individuals among the target audience, using one-on-one read-aloud interviews, focus groups and questionnaires.

**Health Belief Model (HBM)**; The HBM came into existence by Hochbaum in 1958 where he discovered that those who perceived that they are susceptible to the tuberculosis and belief that individuals with the disease might be asymptomatic, hence considered the screening as beneficial which separated them from those who had the disease and did not attend for the x-ray screening (Abraham & Sheeran, 2015, pg. 30). This model pays attention to two (2) aspects of individual representation of health and health behaviour: threat perception and behavioural evaluation. The cues of the threat perception include; perceived susceptibility to health problems, and perceived severity of the consequences of the illness. The behavioural evaluation are the perceived barriers like cost, lifestyle, sacrifices, and the benefits or efficacy of recommended health behaviour (Abraham &

Sheeran, 2015, pg.31-32). Additionally, cues like perceptions of symptoms, health education campaigns, diagnosis of a family member, media report, and health warning labels on product can move people to change their health behaviour.

**Theory of Planned Behaviour (TPB)**; this theory originated from the Theory of Reasoned Action in 1980. The purpose of TPB was to explain that behavioural intentions are influenced by the attitudes, subjective norms, perceived behavioural control, social norm, and perceived power. The TPB says motivation/intention and behavioural control/ ability can trigger the achievement of the recommended health behaviour (LaMorte, 2019). Ajzen (1991) cited in Sheppard (2012) stated that "the stronger the intention to perform a behaviour, the more likely a person is to perform that behaviour". However, it is not always the intention to adopting a certain behaviour changes into real behavioural performance. This theory is helpful in audience profiling.

The **Risk Information Seeking & Processing (RISP) model**; this theory uses the TPB and the Heuristic-Systematic model to discover the information gap between the public's perceived current knowledge and the knowledge the individual will need to mitigate the risk accordingly. Information sufficiency is very key in this model. Information sufficiency is the amount of information one has about the risk and the needed information to make an informed decision (Sheppard, 2012).

**Extended Parallel Process Model (EPPM)**; The EPPM came out of fear-as-acquired drive model introduced in 1953 by Hovland, Janis and Kelly (Popova, 2012). This model states that for an individual to be motivated to take action to mitigate his or her state of fear, he or she has to first learn to fear a threat. The EPPM went further to say if the action

taken by the individual is able to mitigate the state of fear, then this action becomes accustomed response to the threat in the future because it gives a reward in a form of reduced fear (Popova, 2012).

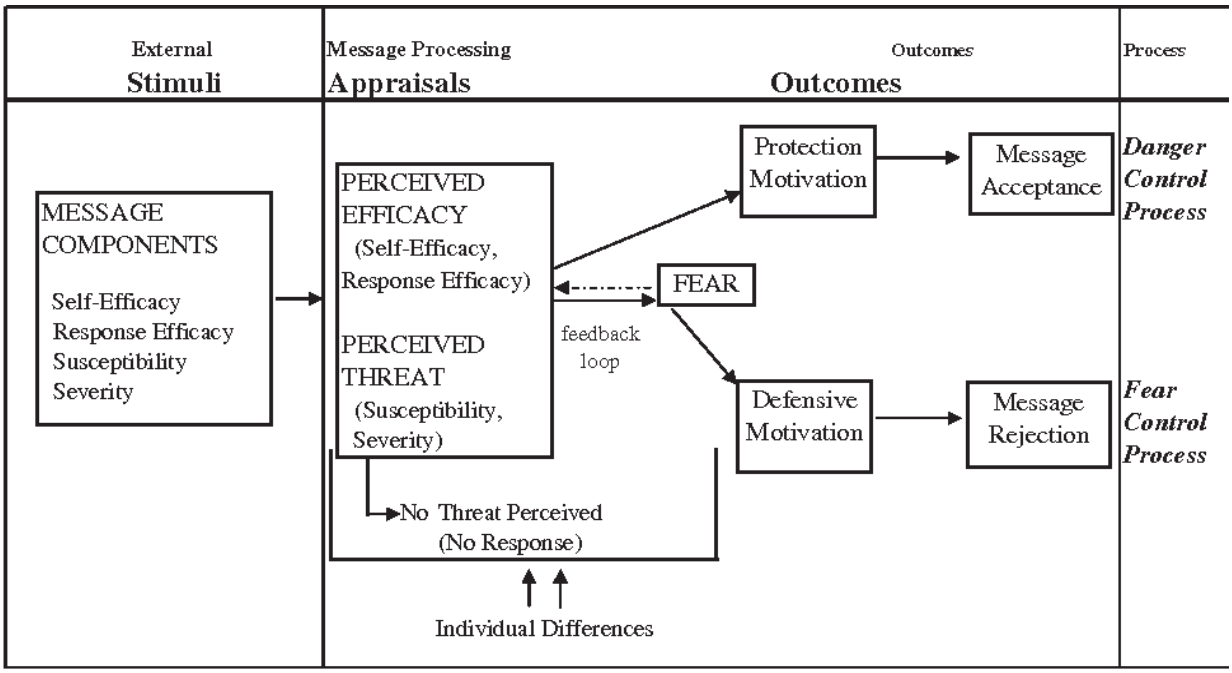


Figure 1. The Extended Parallel Process Model.

**Figure 1.0 The Extended Parallel Process Model, Kim Witte (1998*).***

Photo Credit: Semanticscholar.org

**Image Restoration and Repair**; This theory considers the image of the responsible institution during the period of the crisis very important in moving the publics into recommended action, hence it is imperative to restore and repair the image of the responsible institution for the management of the crisis if allegations are made against them (responsible institution). Benoit & Pang (2008) cited in Holtzhausen & Roberts (n.d.) developed five (5) strategies to restore and repair an organizational image. The

organization may deny the allegations, and shift blame to others (that is evasion of responsibility). Apology (mortification) can only be used if the organization felt guilty but if the apology will take the organisation out of business, then it is stumble (Hearit & Roberson, 2010 cited in Sheppard, 2012). As a risk communicator, in responding to the allegations, it is good to focus on the positive actions the organisation has taken to reduce the offensiveness as well as outline the actions to correct the problem without necessarily apologising (Liu, 2007, Benoit, 1997 cited in Sheppard, 2012). However, if the target audience have strong negative emotions toward the responsible institution, the effectiveness of the corrective action taken by the responsible institution is reduced which affects the recommended action response (Muralidharan et al, 2011 cited in Sheppard, 2012).

**Situational Crisis Communication Theory (SCCT);** this theory helps to understand the public's crisis perceptions and intervene appropriately. Ulmer (2001) cited in Sheppard (2012) asserted that prior reputation to crisis is always seen as asset during crisis. This theory almost use the same strategies for organizational response such as denial, diminishment (reducing offensiveness), and rebuilding.

**CAUSE (Confidence, Awareness, Understanding, Solution & Enactment) Model**

During crisis, the affected population battle with factors such as Confidence, Awareness as well as Understanding of the risk message. These factors have effect on the affected population's feelings toward Solutions to the problem and take action (Enactment). This model posits that when the aforementioned factors are effectively attended to, there may be effective risk resolutions because it can move the public into action.

**Precaution Adoption Process Model**; this model postulates that people go through systematic process to adopt and maintain recommended behaviour. First, the individual is unaware of the risk, then becomes aware but unengaged. At the decision making stage, the individual may decide to act or not to act. If the individual act, then he or she adopt the recommended behaviours and maintain them.

**Systems Dynamic Model**; The systems dynamic model emanated from the works of Jay Forrester in the 1950s. This communication model emphasized that interactions and feedback from the publics during the recovery phase is very important to understand and determine the changes that need to be done in the risk messages development process to achieve the desired behaviour.

## 2.2 Discussion

### 2.20 Risk Perception & Communication in the context of Coronavirus Disease (COVID-19).

### 2.21 COVID-19 Risk Perception.

Slovic (1992) argued that risks considered as voluntarily seem to be seen as lower than risks imposed by external forces or involuntary. In the case of COVID-19 pandemic, the risk is uncontrollable by individuals, health authorities as well as the governments (Cori et al, 2020) which should be perceived as greater. Slovic further argued that uncommon risk is perceived as scary, risk with benefits are more acceptable, reversible risk is perceived with less anxiety, and risks that are not visible are perceived to be more dangerous than the visible ones. In the context of COVID-19, the disease is novel, hence little is known about the virus which can be perceived as frightening due to fear of death (Cori et al, 2020) but

it seems the publics in some part of the globe are not influenced by these factors to adhere to the recommended behaviours especially social distancing and wearing of face mask (Bonful et al, 2020, pg.19). A story by Joy Online that a 30-year-old patient thought the 'virus' was a 'hoax' died after attending a 'COVID party' at Methodist Hospital in San Antonio (www.myjoyonline.com, 2020). Rohrmann (n. d) admitted all the assertions made by Slovic (1992) but posited that these perceptions should not be used to predict the actual behaviour of the affected population.

**2.22 COVID-19 Risk Perception in Ghana.**

In the works of Dorcas Serwaa et al (2020), most Ghanaians knew/know COVID-19 was/is viral infection, the incubation period, and origin of the disease. Some people perceived that COVID-19 is treatable, and other Ghanaians thought there is inadequate information to make risk decisions (Dorcas Serwaa et al, 2020). Most Ghanaians perceived COVID-19 as dangerous disease, expressed worried and accepted there was high risk of contracting disease but saw old aged people as high-risk group (Ibid). It can be deduced from Slovic (1992) that the risk perceived by most Ghanaians can be invisible (dangerous), irreversible (worrisome), hence expected to see risk-avoidance behaviours among majority of Ghanaians although Rohrmann (n. d) argued that these perceptions should not be used to predict the actual behaviour of the affected population.

However, observations made by the author in the capacity as health service provider through phone calls and social media from family and friends as well as the internet include; some Ghanaians perceived the disease as a "curse" from God due to homosexual practice, others too argued that it is a conspiracy theory to make money even among some colleague health workers as well as the disease for "elite". Additionally, some

people believed that they are "good" Christians and Muslims, hence their "Almighty Maker" will not let the disease infect them while others think the disease is not real because they have not seen anyone dying of COVID-19 (www.ghanaweb.com/GhanaHomePage/NewsArchive/Negative-perception-hindering-fight-against-coronavirus-1001800 ). This showed that some Ghanaians perceived the risk as artificially created, "sinners' disease", and "hoax", hence lower risk which may affect their risk-taking and risk-avoidance behaviours.

Another observation made on broadcast media and internet was that a final year KNUST Senior High school student who complained of abdominal pain died as result of being allegedly ignored when he called for help. A worried student further emphasized that "we were sad because the teachers asked us not to touch or get close to him because it could be COVID-19 and that we could be infected" (www.myjoyonline.com, 2020). It can be deduced that knowledge as posited by Slovic (1992) as a factor in risk perception is very key. The teachers in the school perceived the risk as more hazardous due to their knowledge level such that the victim was denied timely medical attention leading to death. However, this case contradicts the argument made by Rohrmann (n. d) that the aforesaid perceptions should not be used to predict the actual behaviour of the vulnerable population.

### 2.23 Available Risk Communication materials on COVID-19.

a) **Commentary on Materials published by International Organizations**.

***World Health Organization (WHO)*** ; WHO declared COVID-19 as public health emergency of International concern on 30th of January, 2020, and pandemic on 11th of March, 2020. WHO suggested every health facility get a triage station to screen patients

for COVID-19, and isolate suspected cases at a separate place to limit potential infections as well as post information materials to remind patients and visitors to practice good respiratory and hand hygiene. However, asymptomatic patients may pass through this triaging screening without being suspected for COVID-19. For instance, there was a study which underwent investigation on 565 Japanese citizens evacuated from Wuhan at the end of January, the results revealed there was incidence of asymptomatic infections of 30.8% (Gao et al, 2020). This means that triage screening using signs and symptoms, temperature checking and history taking is not enough to suspect a case especially if patient is asymptomatic.

Furthermore, WHO advised health care facilities to have case definition and decision flow diagram as a reference document in triaging. WHO also emphasized on the need to train health workers on the selection and proper use of Personal Protective Equipment (PPE) as well as the Infection Prevention Control (IPC) to protect your workforce. On the contrary, according to the International Council of Nurses, over 230,000 health workers are infected globally (https://www.aa.com.tr>europe>ov...), and 779 health workers according to joint press statement by Ghana Medical Association, Ghana Registered Nurses and Midwives Association, Health Services Workers' Union of TUC Ghana and Government and Hospital Pharmacists Association on 9th July, 2020. One may ask if the health workers were not trained adequately or lacked adequate PPEs, or the health workers negligence to IPC measures? This is the area researchers should pay attention to.

WHO risk communication package for healthcare facilities also outlined things to do to prevent infection or cross infection such as wash your hands frequently, and these things are actionable messages as well as clear and simple which is a process risk communication

concept (Seeger et al, 2018). For the first time, WHO extended its sensitization on WhatsApp in the era of COVID-19, and this is highly recommendable.

***UNICEF***; The document titled *Key Messages and Action for COVID-19 Prevention and Control in Schools* outlined facts about *COVID-19*. These facts about COVID-19 is very important because Knowledge theory explained that people perceive risk based on their level of knowledge: the more you know, the higher the perceived risk, hence the lesser the risk-taking and the higher the risk-avoidance behaviours. The document went further to produce actionable messages, using the Crisis and Emergency Risk Communication (CERC) model to give warnings and guidance targeted at specific audience at a time. However, there is no risk communication impact assessment study on this document to determine its practical benefits.

***UN Refugee Agency (UNHCR);*** This agency published the document, *Risk Communication and Community Engagement –COVID-19* which emphasized on timely information on what is known and unknown about COVID-19 in a participatory, community-based approach, with a community feedback. This increases acceptance and trust from the communities and provide opportunity to identify and clarify misinformation and rumours. It can be understood at this point that UNHCR used CERC model to guide and warn the users of their document, deliberative process model which talks about the need to engage everyone that matters in the situation to establish common understanding in order to assign risk responsibilities to each stakeholder in the risk management decision process as well as systems dynamic model through community interactions and community feedback to inform contextualized changes in the risk messages development, and the precaution adoption process model where community were unaware of COVID-19 but

became cognizant through engagement and involved in risk decision process. This may increase one's willingness to accept and adopt the recommended behavior because the person felt he or she was part of the process.

In page 4 of UNHCR document, it was noted that older people and those with comorbidity like high blood pressure, diabetes are at most risk of developing serious illness (https://data2.unhcr.org>details ). It appears to reinforce the most popularly held undefended belief that adolescents are not vulnerable, thus undertake high risk behaviours (Bodemer & Gaissmaier, 2015, pg. 17) due to the perception that their likelihood to die is in the near future when they (adolescents) are exposed (Fischhoff et al, 2010 cited in Bodemer & Gaissmaier, 2015, pg. 17).

Lastly, it was observed that page 5 of UNHCR document recommended the wearing of face mask for only those ill with COVID-19 (https://data2.unhcr.org>details ). On the contrary, study done by Mizumoto et al (2020) cited in Gao et al (2020) on "Diamond Princess" cruise ships showed that the incidence of asymptomatic infections was 51.7%, and these asymptomatic persons can infect others unknowingly (Gao et al, 2020), hence the need for everyone to wear face mask. Although, COVID-19 is novel, thus little is known about the disease, it is therefore important to regularly update and revise published risk communication document as and when the new scientific evidence emerges so that diverse affected population who use the internet medium will have accurate and uniform information to build trust and confidence to make informed risk decisions.

**b) Commentary on Materials published/ unpublished by National Institutions.**

***Ghana Health Service (GHS).***

The Ghana Health Service (GHS) has unpublished 2019 Risk Communication document but not specific to COVID-19. The ultimate goal is for "everyone at risk is able to take informed decisions to mitigate the effects of the threat (hazard) such as a disease outbreak and take protective and preventive action". It was noted that Risk communication is a core public health intervention in any response to disease outbreaks/epidemics, pandemics and other health emergencies. GHS sees risk communication as integral part of functions and activities such as disease detection, sample collection, reporting, analysis and interpretation, preparedness, feedback and response at the community, health facility as well as district, regional and national levels. This affirms Durodie` (n.d.) view that when people are less connected, they become less corrected which bring their subjective impression about the world into reality, and this has negative impact on how they (people) see themselves and the world as a whole. It is therefore critical to involve the people throughout the process to increase acceptance and adoption of the risk messages.

Some of the key principles of risk communication spelt out by the unpublished document were;

1. Creating and maintaining trust through timely and transparent information, and participatory communication, considering the people's beliefs, practices and traditions.
2. Giving timely announcement and transparency (situational reports) on what is known and unknown as and when the information comes, using all platforms available but the information should be consistent and coordinated.

3. Public concerns should be listened, understood and respected, and this can be done through social media and media monitoring, key informant interviews, community walk-throughs, Knowledge, Attitude, Practice (KAP) surveys and others.
4. Proactive risk communication plan (Preparing in advance).
5. Easy access to information that meets specific needs of target audience.

The aforesaid key principles of risk communication extracted from GHS 2019 unpublished document showed that it is very important to consider Baruch Fischhoff's (1995) seven (7) evolutionary stages of risk communication for best practices (Leiss, 1996, pg. 87).

Additionally, the GHS unpublished document (2019) asserted that single approach cannot be used to achieve the risk communication objectives but multiple core approaches like Health education, Social mobilization, Community engagement, Outbreak communication, Crisis communication, Rumour management and Advocacy as and when necessary to meet desired goals.

Last but not least, to be able to implement risk communication for its intended purpose, systems must be in place, such as internal and partner communication and coordination, system for public education, constant engagement with affected communities and a system for listening and managing rumours.

### 2.24 Risk Communication in the context of COVID-19 in Ghana.

**A) *Communicating during the preparedness and response phase*.**

The communication objectives outlined in the GHS 2019 unpublished document during preparedness phase include empowering the public with knowledge and actions to take during an emergency, gaining the trust of the affected population, and responding to

rumours and misinformation to avoid fear and panic. Subsequent discussions will be guided by these set of communication objectives.

The Ministry of Health (MOH) reactively communicated to the Ghanaian population through press release on 31st January, 2020, and updated Ghanaians on the preparedness on 2019 Novel Corona Virus, now COVID-19 when World Health Organisation (WHO) declared the disease as Public Health Emergency of International concern on 30th January, 2020. In the press release, the MOH assured the nation with some measures put in place such as establishment of National Technical Coordinating Committee (NTCC), with its function to review the resilience of the nation's current arrangement to prevent outbreak (www.ghanahealthservice.org/covid19 , 2020). Additionally, the public was requested to adhere to COVID-19 safety protocols. These safety protocols were outlined in clear and simple term, which can be said that MOH and its agencies considered the four (4) stages when one is learning any new information such as unconscious incompetence, conscious incompetence, conscious competence and unconscious competence (Trudeau, 2004, pg. xiv-xv). CDC (2014) argued that for effective risk communication, 'be first, be right, be credible' to communicate the risk to the affected population. It appears MOH was a little late to communicate to the Ghanaian population when the disease was declared as Public Health Emergency of International concern. MOH could have communicated the same day (30th January, 2020). However, a technical committee was established with assigned duties as per the GHS 2019 unpublished document, and Seeger et al (2018) posited that in communicating risk to the publics, the message should be actionable to move the publics to specific actions to mitigate or reduce the risk, and same done in the first press release of the MOH.

Within the early days of February, 2020, there were rumours in the media about suspected cases in Ghana, this made the MOH to again reactively communicate officially to the nation through press release that there are 9 suspected cases including the 2 recent from Korle-Bu Teaching Hospital, and all tested negative for COVID-19 (www.ghanahealthservice.org/covid19 ,2020). It appeared WHO (2017) guidelines to communication risk in real time were not observed. Rumours can mislead the publics to affect their risk behaviours. Meanwhile, MOH and its other agencies might use the Situational theory of Publics (STP) to segment the general population into active communication behaviour (information seeking) and passive communication behaviour (information processing) publics. Some of the publics are always seeking for information, hence they need constant updates so the agencies responsible must communicate proactively.

Furthermore, in the early to mid-February, 2020, there were emerging debate as to whether Ghanaian students should be evacuated from Wuhan city and the entire Hubei Province in China, the epicenter or not. Some of the leaders within the GHS/MOH responded to this debate in the media through interviews and call-in but MOH finalised the debate with a two-page press release on the 12th of February, 2020. This document reassured the nation in terms of emergency preparedness response and surveillance such as key stakeholder engagement like regional directors of health services, Chief Executive Officers of Teaching Hospitals, Ghana Immigration Service, Port authorities and others as well as the intensification of disease surveillance internally and points of entry. It also outlined what was done to protect and ensure the Ghanaians student in China are safe as well as the collaborative consultations with other International organisations like WHO, US CDC and

others. It can be noted that WHO (2017) principle of risk communication was followed such as collaborating with developing agency and organizational networks across the nation and world, tailored specific needs communication at that specific time for the citizenries, which according to Crouse (2008), Ruggiero et al (2013) cited in Seeger et al (2018) can increase understanding and cooperation. However, the Ministry of Health (MOH) could have used some of the publics in this case, the Ghanaian students in China leadership and the parents to communicate to the nation and the world as a whole because it is important to accept the public as legitimate partners (Covello & Allen, 1988 cited in Sato, 2015 pg. 7). Although, there was write up by Douglas Adu-Fokuo, a Ghanaian student in China, reassuring the nation that the systems put in place will help to mitigate the risk, and that 'they' are fine. Douglas Adu-Fokuo further said "what is needed most from family and friends is the social support both spiritually and psychologically. Support us in prayers and give us message of hope full of inspirations. Rather than calls for evacuation which can endanger the entire population in Ghana" if WHO protocols are not followed (https://citinewsroom.com/2020/02/coronavirus-to-evacuate-or-not-to-evacuate-thoughts-of-a-student-in-china-article/ ) but was not timely. Subsequently, more of these could have been done by the MOH to reassure the Ghanaian population for effective risk communication.

In that MOH 2-page press release, respectful communication as outlined as a principle of effective communication by CDC (2014) was used, that is 'The Government of Ghana is much concerned about our citizens in China especially the Ghanaian students, and is working to ensure their protection , safety and wellbeing as we continue to supply basic needs' – pg. 2.

Confirmed Cases of COVID-19 was recorded in the West Africa sub regions such as Nigeria which was communicated to the Nation officially through press release on 28th of February, 2020 by GHS. It was observed that the actionable messages were consistent, but contact was added for the public to call. Additionally, specific authorities were mentioned in the letter for media engagement to prevent fear and panic communication. This means that some team members were assigned as spokespersons as part of the GHS 2019 unpublished risk communication plan.

On the 12th of March, 2020, Ghana had first two confirmed cases of COVID-19 which was communicated through press release and press briefing some hours after laboratory results from Noguchi Memorial Institute for Medical Research. The press briefing was organised by the Ministry of Information (MOI) for MOH/GHS. This means that it was a multisector approach (GHS, 2019, unpublished). MOI then announced that there has been special website created for COVID-19 updates only for media and public consumption to streamline truthful and credible communication: www.ghanahealthservice.org/covid19 which is the main source of up to date information. The MOI also put in place twice press meeting weekly and '*ask the info. Ministry*' on Ghana Broadcast Corporation (GBC) every Tuesday. Not forgetting, The President of Ghana regularly addressing the nation on what government is doing in terms of COVID-19, with one of the updates moving most Ghanaians to eat healthy local foods like 'dawadawa, prekesa,' and others to boost the immune system, by so doing, the President contextualised the risk message (Social Amplification of Risk Framework (SARF) model).

Lastly, it was observed that most citizens and other civil society like Occupy Ghana were raising concerns that the MOH/GHS massaged the figures for confirmed cases but this was

counteracted by the Deputy Minister of Health, Hon. Benard Okoe Boye on so many media platforms like Asempa fm's 'Ekosiisen' program which is recommendable because image repair and restoration is very key in risk communication. The emerging issues now is the closure of schools and wearing of facemask, and this needs intensive community engagement, health education and empowerment of community members to lead the advocate to achieve the desired communication objectives, which is seen as best practices of risk communication to promote risk-related behaviour change (Morrow, 2009, pg. 5).

**B) Communicating during the recovery phase.**

In one of the press briefing, Director of Public Health, GHS, Dr. Ebenezer Badu Sarkodie said Ghana has reached its highest peak, and hence, continued adhering to the safety protocols can flatten the curve (https://www.myjoyonline.com>news ,2020) but in recent times, the data from the www.ghanahealthservice.org/covid19 showed that there is increasing confirmed cases which are more institutional-based, evidenced by some engineers working on Tema to Mpakadan railway project in the Eastern region at the AFCON camp B at Kpong (www.citinews.com , 2020), 693 staff at the fish processing factory-Pioneer Food Cannery at Tema revealed by Dr. Franklin Asi Bequine, Ghana Health Service (GHS) during Ministry of Information Press briefing on Tuesday, May 19, 2020, 46 staff of Bulk Oil Storage and Transportation CO. LTD. (BOST), and some staff of COCOBOD (www.ghanaiantimes.com.gh , 2020).

Meanwhile, the health authorities in collaboration with the Public Services Commission produced written communication titled: *Coronavirus (COVID-19)-Workplace contingency measures*, dated 13th of March, 2020, which was the next day Ghana confirmed two cases

to state institutions to prevent the spread of COVID-19 within the workplace(www.ghanahealthservice.org/covid19 , 2020).

News item sighted at www.citinews.com (2020), titled: *Government details safety measures to stop COVID-19 infections at workplaces* by Nii Larte Lartey explained that the Minister for Trade and Industry, Hon. Alan Kojo Kyerematen made it known during the press briefing organised by MOI on Thursday, 25th of June, 2020, that the government has realised that available case management data showed that most new cases of COVID-19 came from corporate organisations, therefore, enhanced protocols are put in place such as restriction of employees from workplace if one feels unwell, reduction of internal meetings but more online meetings as well as rotation of employees. The news item further explained that the workplace enhanced protocols also include mandatory presence of a registered nurse at the workplace if employees are more than 29, development of work schedule into shift system, virtual working if possible. This content of the enhanced protocols at the workplace outlined by Hon. Alan Kojo Kyerematen on behalf of Government is almost the same as the written communication produced by the Public Services Commission earlier on. The question one may ask is what's hindering the risk communication at workplace to be effective?

It can be said that Ghana is yet to be in the recovery phase.

**2.25 Conclusion**

The reviewed literatures have guided the author to understand the publics, risk perceptions and what questions to ask to get answers to the research questions to achieve the research objectives. Additionally, it has informed the author to do the research in a conceptual and

theoretical framework in understanding effective risk communication in Ghana in the era of COVID-19 and recommend where necessary.

# CHAPTER THREE

# 3.0 METHODOLOGY

## 3.1 Overview of methods and techniques

This chapter introduced you to the methodology of the research. It entails how and when the research started, ethical clearance, the research population, the type and source of data, the procedure for the data collection, identification of specific institutions/organizations and why those institutions/organizations were targeted, how the search engine was done, and the challenges encountered as well as how they were addressed. In nut shell, the research was done in Ghana from January to July, 2020, using secondary online/soft copy data from credible institutions/organizations and academic papers, which were reviewed and critiqued, and some of the challenges experienced by the researcher during the data collection. These will be discussed into details in the subsequent paragraphs.

## 3.2 Research Procedure

The Institutional Review Board of the Ghana Institute of Journalism gave ethical clearance to go ahead with the proposed research before the whole process of the research started. Retrieving of research materials started since January, 2020 when COVID-19 came as an emerging public health emergency. At that time, there were few researches done on the disease because it (COVID-19) is a novel but now (as at July), there are many but not more researches done on COVID-19 which is good for informed policy decision making.

This research solely used secondary data to understand the effective risk communication of COVID-19 in Ghana. Reviewing of literature was done using academic papers, news reportages, technical documents, unpublished documents, articles, personal observations,

press releases, and press briefings on the research topic. Specific institutions/organisations like World Health Organization (WHO), United States Centre for Disease Control and Prevention (CDC), United Nations International Children's Fund (UNICEF), United Nations High Commissioner for Refugees (UNHCR), Ministry of Health (MOH) /Ghana Health Service (GHS) were targeted.

Searching online using google scholar as well as visiting the website of MOH/GHS on risk communication plan for Ghana started but no document of that kind was found. This made the researcher very curious to find out more. The researcher wrote a request letter for risk communication policy document to the GHS headquarters, Accra but was referred to the National Risk Communication located at Health Promotion Division, Korle-Bu. Introductory letter was given to the Director of the Health Promotion Unit through the Secretary who then directed the researcher to the National Lead of the Risk Communication team. Presentation of the letter through reading of the research topic, outlining of the research objectives and other relevant information was done. This was accepted by the National Lead of the Risk Communication team.

This helped the Risk Communication team to identify the kind of document that were needed to achieve the research objectives. Soft copy of the unpublished GHS 2019 *Technical Guidelines for Integrated Disease Surveillance Response in Ghana, 3rd Edition: Section 7; Risk Communication* was given by the National Lead of the Risk Communication team. This document was reviewed into details to gain deeper understanding of effective risk communication in Ghana in the era of COVID-19.

### 3.2a Data Collection, Sample Technique & Research Population

Meanwhile, other relevant documents were retrieved from aforementioned specific institutions/organizations and other academic sites as well as credible Ghanaian media and international media platforms through academic search engine and database or online journals or online books such as google scholar, JSTOR, HINARI, Sage journals, Research Gate, Science Direct and others, using the online library created by Ghana Institute of Journalism to access. The website created specifically for COVID-19 updates in Ghana by GHS/MOH was reviewed deeply to meet the research objectives.

Additionally, other medium such as Facebook was used to retrieve information relevant to the research. Purposive sample technique was used to select specific targeted institutions due to the nature of the research. This is because such targeted institutions are key players in the medical village fraternity. Convenient sample technique was also used to retrieve any important document available which is directly or indirectly related to the research, in order to gain broader view and understanding of the research. The research population was Ghana, with about 30 million people, ranging from children to old adults as well as different ethnic groups across the 16 regions.

### 3.2b Data collection method.

Secondary data were collected through search engine by using words like effective risk communication pdf, risk communication in Ghana pdf, COVID-19 risk communication pdf, COVID-19 risk communication in Ghana pdf, risk perception pdf, COVID-19 risk perception pdf, COVID-19 risk perception in Ghana pdf, concept of Risk pdf, concept of Risk Communication pdf, concept of communication pdf, theories of risk communication pdf, theories of risk perception pdf and others.

### 3.3 Research Approach

Exploratory research approach was used because personal observations made on risk perceptions in Ghana through phone calls and media monitoring, which has direct or indirect influence on the risk communication sought to be understood more, and to determine if what was observed can be explained by current existing theories or concepts. The research questions were informed inductively to understand and determine the behavioural patterns in the Ghanaian context of COVID-19 and derive the best approach to solve the problem. This research also used descriptive approach to be able to expand the understanding of effective risk communication by collecting much information to predict the actual behaviour of affected population in pandemic like this in order to answer the 'what' questions the researcher posed.

### 3.4 Limitations

This research would have been very interesting if primary data were used but due to the mode of transmission of COVID-19 as emerging airborne and micro droplets, it was unwise to risk your life at the expense of research. Notwithstanding, primary data collection could have been done online but the school instructed to undertake long essay which is a desk research due to COVID-19 restrictions as well as the limited time for the research to be done for purely academics, as a requirement to be awarded the Master of Arts. Using the online library created by the school (Ghana Institute of Journalism), some of the academic papers were not accessible but requested for online payment. Funding from interested donors could have helped to access some of these good academic papers. However, the school online helped to access some good journals, database or e-books

related to the research. There were seldom internet challenges during the retrieval of online research materials but 4G network was used to solve that challenges.

### 3.5 Conclusion

In conclusion, the research materials were retrieved from credible sources, both online and office (in this case, GHS), using secondary data as the main source of data to explore and describe the trend of behaviour patterns to understand effective risk communication in Ghana in the period of COVID-19. In spite of the limitations, the research is good and very useful to inform public health decisions now and then.

# CHAPTER FOUR

## 4.0 CONCLUSION

### 4.1 Summary.

Risk communication can be explained as the exchange of information and/or ideas between experts and publics, in a real time, using deliberative approach so that the publics will own the process and the content of the risk message to move the target audience into recommended action to mitigate the risk. It is always important to segment your audience into information seeking and information processing publics (that is Situational Theory of Publics) to inform the risk message development process.

As a risk communicator, one must note that before an individual learns any new information, that individual goes through four (4) stages such as unconscious incompetence (unaware you do not know), conscious incompetence (aware you do not know), conscious competence (aware you know but consciously think about it) and unconscious competence (easily recollect without thinking about it).

Risk perception has very great influence on the behaviour of the affected population. It is therefore commendable to use Slovic's Psychometric Paradigm to get the baseline understanding of the risk perception of the target audience to determine the risk communication message.

It can be deduced that COVID-19 Risk perception in Ghana was Lower familiarity/Lower dread because some Ghanaians still thought the disease is a 'hoax', and those who thought the disease exists perceived that COVID-19 is not life threatening but this life threatening

is manifesting, taking lives of 153 as at 24/07/2020 (www.ghanahealthservice.org/covid19 , 2020).

Analysing Ghana's COVID-19 situation, Seeger et al (2018) assertion that there is likelihood of adoption of risk-avoidance behaviours if risk perception of the publics is higher than the actual risk, henceforth, it would have positive impact if the risk communication team use provocation and shock tactics to develop the risk messages.

From observations in other research works, it can be said that for best practices of risk communication, the risk communicator must know the target audience, produce contextualised target messages, communicate this contextualised target messages as soon as possible, be honest and truthful with the information: communicate what's known and what's unknown, acknowledge the feelings and sufferings of the affected population, provide option (that's what to do to mitigate the risk), and engage the affected population to collectively share and experience the risk, target the easiest audience, and using them as community advocate to trigger recommended action. In addition to, every risk manager must be proactive and be guided by risk communication theories and concepts during crises management.

### 4.2 Research findings

1. High incidence of Community or institutional-based infections evidenced by increasing confirmed COVID-19 cases in communities like Obuasi, institutions like Tema Fish processing factory-Pioneer Food Cannery, BOST, COCOBOD, although proactive actionable risk messages were contextualised institutionally.

2. Community agitations as seen in the use of Ghanaman Soccer Centre of Excellence at Prampram in the Greater Accra Region, Aggrey Memorial Zion Senior High School at Brafoyaw in the Central Region and others as isolation or treatment centres within the localities.
3. Discovery of some peculiar features of COVID-19 risk perception such as Pseudoscience ideations like man-made disease at the scientific laboratory and a "hoax", faith thoughts such as "sinners'" disease as a punishment for homosexual practice from the Supernatural Being, social class analogy like "elite's" disease, developmental stages-risk related such as young adults cannot die from COVID-19 but the old people.
4. There is no known risk messages for vulnerable people like the Deaf, blind and others.
5. No post incident review guidelines document for Ghana although it was mentioned in the GHS 2019 unpublished risk communication policy document.
6. High prevalence cases of health workers' infections locally and globally.

**4.3 Recommendations.**

Following the trends of behavioural patterns in the adherence of the COVID-19 safety protocols in Ghana, the following recommendations are suggested for effective risk communication.

1. New approach induced by the author called ***Continuity-Flighting Communalised (CFC)*** risk communication approach can be used. Research into this approach can be done to assess its function on effective risk communication. This approach was borrowed from advertising media strategy called *continuity and flighting*. The

CFC approach is where the risk managers engage two or more communities frequently and concurrently over a period of time, for the communities to share and experience the risk together with the risk managers and assign risk management responsibilities then switch to flighting strategy where two or more communities are engaged as follow-ups concurrently for one period, and no engagement in other period (that's alternating the engagement periods) for a period of time, which will end based on assessment made. This approach helps the community to own the process, content of risk communication and assume risk management responsibilities to mitigate risk in crisis.

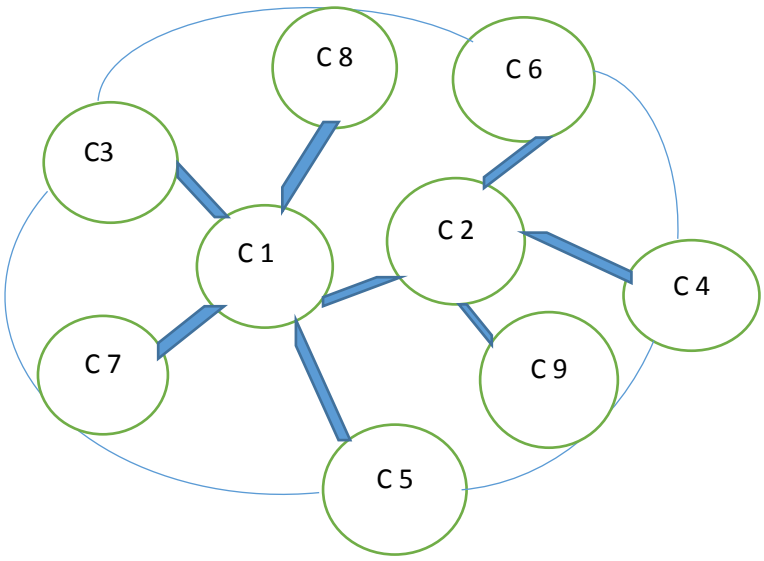


**Figure 1.2 Continuity-Flighting Communalized (CFC) approach. C-Community.**

2. There is the need to build the capacity of risk managers such as health workers, security personnel, risk communicators, and others to be competent in handling public health crisis to build trust and cooperation with the public.

3. Development communicators or health communicators who have acquired special training in health communication should be included in the national risk communication if there is none to have broader multi-sector risk communication guidelines development to meet the needs of the affected society.
4. Engagement of language expert in the planning of Risk Communication policy to obtain all-inclusive effective risk communication. This has become necessary because there is no known messages for people with disabilities such as the blind, deaf and others who are part of the vulnerable population.
5. Regular update of risk communication messages and strategies as and when new emerging evidence comes to obtain uniform content to build and maintain trust with the publics.
6. For effective risk communication, post incident review guidelines document should be priority.

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