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A Feverish Spring: A Comparative Analysis of COVID-19 News Framing in Sweden, the UK, and Egypt

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A FEVERISH SPRING: A COMPARATIVE ANALYSIS OF COVID-19 NEWS FRAMING IN SWEDEN, THE UK, AND EGYPT

A Thesis Submitted by

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Dedication

To the soul of my Father, who was my biggest supporter, May Allah bless him.

To my twins Adam and Malak, they have made me stronger, determined

and more fulfilled than I could have ever imagined. I love you to the moon

and back.

To my Mother for her unconditional and genuine love, support & encouragement……

To my Husband who inspired and supported me all the time ……

To my Brother and his unconditional support …….

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Studying media coverage of a deadly global pandemic was not an easy task. But it became tougher when I tested positive with COVID-19 while working on this paper. I truly felt every single word in the news. I was the researcher, the audience and the sick patient.

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ABSTRACT

Based on framing and the social responsibility theoretical frameworks, this comparative study analyzes the dominance of frames in the media coverage of the COVID-19 global pandemic across three countries that have adopted different preventative measures: Sweden (herd immunity) the United Kingdom (full lockdown) and Egypt (partial lockdown 'curfew'). While several studies have investigated the media's role during COVID-19, few have analyzed the frames used by the media. The analyses that were made here, for the most part, is on individual countries. The current study bridges a gap by using a comparative approach to interpret the frames discovered in news articles and the tone of these stories across six media outlets in three different countries: Sweden (*Dagens Nyheter* and *Aftonbladet)* the United Kingdom (the *Guardian* and *the Daily Mail)* and Egypt (*Youm 7* and *Al-Ahram*). Furthermore, this paper enriches scholarly studies on media framing and public health crises in Egypt that suffer from limited research. Using a quantitative content analysis over a time frame of five months and 10 days (from January 31 to July 9, 2020), a total of 585 news stories from six media outlets were analyzed. The findings of the story discovered that the morality, human Interest and fear frames were the dominant frames presented in the media across the three countries, while the Blame frame was the least common. A closer examination revealed significant differences among the three countries in six out of the seven frames analyzed. These frames excluded the morality frame and included: the attribution of responsibility frame; the human interest frame; the economic consequences frame; the conflict frame; the fear frame and the othering frame. Moreover, the study found statistical differences in tone of news stories across the three countries.

Keywords: *COVID-19, Pandemics, Public Health, Comparative research, Coronavirus in Media, Media Frames, Communication and Health Crisis, Infectious diseases, Content Analysis*

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Chapter 1

Introduction

The COVID-19 pandemic is an unprecedented crisis in modern history. António Guterres, the Secretary-General of the United Nations, announced that the world is facing "the most challenging crisis since World War II (The Associated Press, 2020)."

On December 31, 2019, the World Health organization (WHO) reported a number of pneumonia-like cases that had an unknown cause in Wuhan, a city in China. The initial expectations were that a disease had originated from a seafood market in the city (Huang et al., 2020; WHO, 2020). The disease was later identified as a new coronavirus strain — a large family of viruses that range from mild symptoms to severe illness — and it was initially named "2019-nCoV," then COVID-19 (WHO, 2020). Only three months after the initial outbreak, the novel virus spread very fast, affecting more than 110 countries. At least 118,000 people tested positive, which resulted in an official announcement by the WHO on March 11, 2020, declaring COVID-19 a global pandemic (WHO, 2020; Ducharme, 2020).

The urgency and novelty of the virus intensified media coverage, which was already more prevalent than any previous coverage of a modern health crisis (Ducharme, 2020). According to data from LexisNexis, there were over 41,000 English-language print news articles in January that included the word "coronavirus," and it was mentioned in more than 19,000 headlines (Ducharme, 2020). According to Parse.ly, a company that measures the performance of content,

at least one percent of the articles published on the top 300 high-traffic news sites were reporting COVID-19 updates. The most popular topics were about flattening the curve, social distancing and self-quarantine (Ducharme, 2020).

The massive influx of information caused a surge in fake news and misinformation, which was described by the WHO General Director as a "dangerous phenomenon of an infodemic" in which inaccurate information spread faster than the virus itself (Yuan et al., 2020; Mheidy & Fares, 2020). Infodemic is defined as the massive increase in the information about a specific topic that usually grow exponentially and rapidly spread in a short period of time because of a specific incident (Zarocostas, 2020) which is the case of the novel Coronavirus pandemic. The spread of false news caused a hysteria, anxiety, chaos, panic buying and fraudulent schemes (Besson, 2020; Mheidy & Fares, 2020). Misinformation masked healthy behavior and promoted erroneous practices that exacerbated the spread of the virus (Tasnim, Hossain, Mazumder, 2020).

In an interview with the Journal of Communication in Healthcare, the director of the Global Infectious Hazards Preparedness Department of the WHO, Dr. SylvieW Briand, shed light on concerns surrounding the spread of misinformation and its possible repercussions. For example, she mentioned the fake news reports that were circulating about Iran concerning the ingestion of methanol as a cure to the virus, which caused over 300 deaths (JCIH, 2020). Dr. Briand said the WHO was working in tandem with faith-based organizations, the health-care sector, the private sector, travel and tourism entities, along with businesses to curb the spread of fake news and, instead distribute accurate information (JCIH, 2020).

On the other hand, the media acted as a "mediator" for health communications to raise public awareness and disseminate precautionary measures released by governments and health authorities (Mutua&Oloo, 2020; Mheidy & Fares, 2020).

Throughout history, a large number of communication studies investigated the role of mass communication during pandemics and public health crises (Atkin & Wallack, 1990; Cline & Haynes, 2001; Nutbeam, 2000; Wete, 1988; Ellis, 2018). Some researchers investigated the roles mass media played during crises, while others went further and tried to understand the impact media messages had on public perceptions (Adelakun &Adnan, 2016). Understanding media messages in mass media and communication research during a pandemic is crucial as they influence the perception of the public, as media practitioners choose what specific information is to be published and what should not, which is one of the framing theory functions (Scheufele, 1999). Media messages, moreover, impacts the individual's health choices by either overestimating or underestimating the health crisis (Berry, Higgins and Naylor, 2007). In addition, it gives researchers a full picture of communication management during health emergencies, as according to Gislason (2013) the selection of specific news frames during a public health crisis impacts societal understanding and reactions to the disease.

When looked at from another angle, given the fact that there are multiple factors that influence how frames are created or modified — such as structural, social, organizational, economical, ideological and individual elements (Scheufele, 1999) — it's important to investigate the frames that dominated media coverage in different countries to have a broader picture of the issue, as well as more diversified results.

Building on previous literature that has highlighted media frames during public health crises, and based on the theoretical principles of the media framing theory, this study will use the deductive approach of content analysis to unveil the media frames used in three different countries. Each one has adopted a distinct strategy to mitigate the spread of the virus. Although it's hard to claim that these three countries are representative of the world at large, each one represents one of the three preventive strategies that have been adopted by countries across the globe: Sweden (herd immunity), Egypt (partial lockdown) and the United Kingdom (full lockdown).

Unlike most European countries, Sweden relied on a different approach which includes cooperation between the country's response and the public's responsibility by maintaining social distancing, working from home if possible, avoiding mass gatherings and limiting the use of public transportation (Savage, 2020). Though the Swedish Government never openly said that reaching herd immunity was their aim, that was the conclusion many reached based on their strategy to keep the country open and allow society to develop a resistance to COVID-19 (Savage, 2020).

Conversely, the United Kingdom announced nationwide lockdown measures on March 20, ordering coffee shops, bars and restaurants to shut down (Nael &Pool, 2020). A day before the announcement, a coronavirus act was given Royal Assent after being passed by Parliament (Hope and Rayner, 2020). The act, which had not been issued since World War II, gave the British government emergency powers to curb the spread of the COVID-19 pandemic. This was done by gathering suspension, detaining people suspected of being infected by the virus and either relaxing measures or intervening in some areas to limit the spread of the virus, help healthcare

employees and assist the public health sector, as well as other sectors that were hit economically (Summerell et al., 2020).

Egypt decided to take yet another approach. The country imposed strict preventive restrictions, but did not impose a nationwide full lockdown. Egyptian president Abdel Fattah al-Sisi announced in a direct message to the public that the COVID-19 situation is "under control" and he is not in favor of "suspending work," as a full lockdown could be "economically ruinous" (Enterprise, 2020, Para.10). On March 24, the country imposed a curfew (partial lockdown) for two weeks from 7 p.m. to 6 a.m., suspending all mass private and public transportation during the curfew hours, closing restaurants, coffee shops, worship places and malls (Ahram online, 2020). The government renewed the curfew for three months until it was lifted on June 27 (Reuters, 2020).

Investigating how the media reported a global pandemic in three different countries demonstrates how various cultures in various geographic regions around the world have completely different news values, political, cultural and media systems.

This study will analyze two online newspapers or news outlets from each country using three constructed weeks from January 31 to July 9. The researcher selected this starting date specifically as both Sweden and the UK together reported their first positive case of coronavirus and the WHO announced COVID-19 as a global threat (CNN, 2020); BBC, 2020; Aftonbladet, 2020) Egypt followed them on February 14 (AFP, 2020). Because of the peak of each country was different, the study used World Meter indices — the Live world statistics platform — of COVID-19 daily cases in the three countries to determine the common day in which all three countries had a decline in new cases. July 9 was the intersection date that witnessed a significant decrease in all three countries. Egypt announced that it was below 1,000 new cases,

Sweden announced the daily tally of new COVID-19 cases fell to its lowest since its peak and in the UK, the Office for National Statistics announced that cases in England were falling on the same day (Al Masry Al Youm, 2020; Reuters 2020; BBC, 2020).

From Sweden, the study analyzed the online versions of two national newspapers, *Dagens Nyheter* (https://www.dn.se/) and *Aftonbladet* (the Evening Post) (https://www.aftonbladet.se/). From the United Kingdom, the study analyzed the Guardian (https://www.theguardian.com) and the Daily Mail (www. Dailymail.co.uk). From Egypt the online versions of *Youm 7* (the seventh day) (https://www.youm7.com/) and *Al-Ahram*(http://gate.ahram.org.eg/) were selected.

This comparative study bridges a gap in the literature as it examines how media covered a modern global pandemic (COVID-19) in three different countries with completely different media systems, news values and media policies. This study will help to shed light on the variations in news patterns across national environments that enhance a mutual understanding of the media's role (Tiffen et al., 2014). Moreover, there is a scarcity of studies about frames analysis during health crises in both Egypt and Sweden.

Chapter 2

Literature review

1. The role of mass media in a health crisis

"We have had great success in the last five years in controlling outbreaks, but we have only recently come to understand that communications are as critical to outbreak control as laboratory analyses or epidemiology."

— *Former WHO Director General, Dr. Jong-wook Lee (WHO, 2007, p. 2).*

Crisis communication refers to situations in which the public's welfare is at risk, and in which something has occurred unexpectedly and requires immediate and effective response to prevent any escalation of harm (Seeger, Sellnow, & Ulmer, 2003). Though it's crucial for communication departments to know the factors and reasons before the existence of a crisis, what is more important is how to communicate with the public to avoid harm during a crisis (Coombs, 2012). During a health crisis, it's very important to inform people and teach them about the reasons behind the outbreak. At the beginning of any crisis, it's crucial to achieve a balance between accuracy of information and credibility, which is a very important component in the information dissemination process (Avery & Kim, 2009). After analyzing the major sources of information of public health, Avery (2010) found that media acts as a crucial source for information during crises due to the value of

mediated messages amid the public's fear about the crisis. Governments have time to develop communication strategies and specific messages that can effectively convey the desired information at different stages of the anticipated pandemic.

Infectious diseases and pandemics have been a major threat throughout history, possibly since society evolved from hunter-gatherers to sedentary agriculturists (Diamond, 1999). Pandemics are still considered a deadly threat that can kill more than 25% of a population (Morens, Folkers, & Fauci, 2004). Global pandemics are considered among the most dangerous threats facing modern society (Davis, 2005; Elbe, 2010; Fidler, 2004; McInnes et al., 2014; Sipress, 2009).

Intermittent outbreaks in pandemics have had impacts on societies throughout history that lasted centuries and strongly shaped the political, social and economic aspects of human civilization (Huremović, 2019). In 2010, the WHO defined a pandemic as an infectious disease that spreads worldwide (World Health Organization, 2010). The booming travel industry, international exchanges, business and diplomacy have all increased the chances of people from different countries gathering in one place, which then makes the spread of infectious diseases across several countries in the world more likely. (Smith, 2006; Houston, Pferfferbaum & Rosenholtz, 2012) The spread of the novel COVID-19 (SARS-coV-2, previously known as 2019-nCoV) is the best example of that.

Pandemics are main part of human social systems (McNeill, 1998). They are a serious threat to contemporary societies, as they may cause serious physical, psychological, social and economic impacts (Davis, 2005; Elbe, 2010; Fidler, 2004; McInnes et al., 2014; Sipress, 2009; Veil et al., 2008). Governments, practitioners, international organizations and researchers have tried to cope with the surprising and unexpected nature of health crises by developing various communication strategies

for emergency situations (Sellnow & Seeger, 2013). For example, the Crisis & Emergency Risk Communication framework (CERC) has been used in communications during an emergent public health crisis in the United States (Novak, Barret, & McAllister, 2008; Veil et al., 2008). According to the Centers for Disease Control and Prevention (CDC), the framework provides guidelines to public health communicators in order to reduce uncertainty, improve risk management, ensure better compliance with suggested behaviors and give the support needed for the organization to cope more effectively (Reynolds & Seeger, 2005). However, the implementation of this framework depends, to a very large extent, on the compliance of "mass media" (Ophir, 2018). According to Coombs (2017, p.34), "organizational messages cannot help stakeholders if stakeholders do not encounter the message." Despite the rapid growth of social media (Vos & Buckner, 2016), mass media remains a primary source of information during epidemics (Reynolds & Seeger, 2014). Mass media plays a significant role in influencing people's response to health topics, as print, TV, radio and internet have a substantial reach (Gunther and Thorson, 1992). Media has an unparalleled influence when telling the public what they should be concerned with (agenda setting theory) and also how they should think (framing theory) (Gunther and Thorson, 1992). Moreover, Coleman (1993) states that to make informed decisions during crises and risky circumstances, one needs quality information and risk judgments on an individual level, which are commonly made through social-level risk judgments and interpersonal channels. Both are directly affected by mass media messages.

If the interpersonal source does not provide enough individual-level risk information, it's easy to reach supplement-risk information, but it will not be easy for some risks, especially health- and science-related crises (Allan 2002; Signorielli 1993;

Fischhoff 1985, 1995; Roche and Muskavitch 2003). In this case, people need to get information from experienced sources. Accordingly, the public relies on mass media as the primary source for news and information about the issue (Allan, 2002; Signorielli, 1993; Fischhoff, 1985, 1995; Roche and Muskavitch, 2003).

Communications and accurate reporting are considered very crucial for managing risk during a health crisis (Vaughan & Tinker, 2009) as they can either inform or misinform the people who may then cause unnecessary panic or unexpected responses (Jones et al, 2010). There are several examples of people responding in an inappropriate manner due to misinformation during pandemics, as inaccurate information about infectious diseases that involve unanticipated outbreaks causes severe economic, physical, psychological and social impacts (Ophir, 2018). One example was in 2003, when several people in China came down with pneumonia. People believed rumors that claimed the disease could be treated with white vinegar, which caused a surge in vinegar prices 12 times the original prices (Ophir, 2018).

According to Mhiedly and Fares (2020), the COVID-19 pandemic has created a phenomenon called “infodemia” as several news outlets and digital media platforms contributed in sharing false and inaccurate information, sources and recommendations on the topic.

It’s crucial to use reliable and accurate information in order to design and implement the precautionary measures needed to promote health awareness in the fight against COVID-19 (Mhiedly and Fares, 2020). In the age of social media, new information transmits rapidly, which emphasizes the need for accurate data to be corroborated to avoid the spread of misleading information (Mhiedly and Fares, 2020). The two scholars here emphasized that media plays a pivotal role in the public response to any health crisis because it acts as a communication portal between

governments, health institutions and the public (Mhiedly and Fares, 2020). The "invisible" nature of infectious diseases and epidemics makes the mass media the "eye" of the public. The media's various platforms become windows through which the people search for true information, facts, the latest government decisions and feedback from the general public, which accordingly shape their reactions to the pandemic (Mhiedly and Fares, 2020).

Media, also, is an important mediator for health communications departments, which, according to Mhiedly and Fares (2020), is defined as the use of communications' tools and platforms to maintain the health sector. Media is a vital actor in raising health awareness and providing access to promotional campaigns, which change public behavior and attitudes, and influence how people behave when it comes to health. Media's effectiveness in health communication lies in strong written, verbal and visual communication strategies that influence the public perception (Mhiedly and Fares, 2020).

There are many scholarly studies about the role of mass communication during pandemics, and communication in crisis (Ellis, 2018). Throughout history, a large number of communication studies have attempted to investigate the risk or crisis strategies of communication and media messages in emergent health situations (Atkin & Wallack, 1990; Cline & Haynes, 2001; Nutbeam, 2000; Wete, 1988). Some researchers investigated mass media roles during crises; others went further to understand the media messages' impact on public perceptions (Adelakun &Adnan, 2016). Previous research has proven the potency of health communication through mass media on promoting health issues, especially the outbreak of health disasters and pandemics (Adelakun &Adnan, 2016). Bernhardt (2004) concurs that public health communication is inherently interventionist, seeking to promote and protect health

through change at all levels of influence. When well-conceived, carefully implemented and sustained over time, public health communication programs have the capacity to elicit change among individuals and populations by raising awareness, increasing knowledge, shaping attitudes and changing behavior (Adelakun &Adnan, 2016).

According to Berry, Higgins and Naylor (2007), media has the influence to sway the perception of the public about health issues and other topics by choosing what specific information will be published and the context within which it will be presented. Moreover, they propose that media can impact the individual's health choices by either overestimating or underestimating the health crisis (Berry et al, 2007). People in large societies use news media when they acquire new information about topics that are out of sight, reach and mind, such as science and health topics (Zaller, 1992; Hmielowski et al., 2014; Southwell, 2013; Lippmann, 1922. p.21). When the public acquires information that relates to diseases and how to remain safe, people tend to seek this information from non-medical sources, one of which is the media (N. Lewis et 9 al., 2012; Ramírez et al., 2013).

A review of the literature has shown that when the public has poor information about a novel infectious virus and its symptoms, it will "prolong delays" in the disease's diagnosis and treatment (Goff et al., 2004; Schwenk, 1999). Rich information about a potential health crisis can help the audience understand the symptoms and what they should look out for. Moreover, reading information about self-protection measures and various precautionary measures (published by the WHO, the CDC or government entities) can help to minimize the spread of the virus and subsequently improve risk control (Goff et al., 2004; Schwenk, 1999).

Information may be delivered to the public after passing through the media procession and changes (Covello, 2003; Ulmer et al., 2008; Veil & Ojeda, 2010). Given that information during a crisis is sometimes scarce, mass media has the power to reach several sources, including the public health organizations' official spokespersons or other concerned sources (Novak et al., 2008).

Susan Moeller (1999) in her book argues that both British and US media practitioners use "formulaic language and sensationalized language" in their reporting about pandemics, disasters and wars in developing countries (p.59). Moeller examined the 21st century media coverage of pandemics, diseases and natural disasters. She made a historical analysis of the media's influence in transmitting the beliefs of the Victorian era about health and the impact those beliefs had on cultural perceptions throughout history. While elaborating on the topic of a "concerning plague," Moeller investigated the media coverage of the Ebola virus, which she believed garnered the same "dramatic" media attention as AIDS due to several factors, such as incurability, the quick infection rate and the fears of it hitting the US (Moeller, 1999,p.91).The scholar extensively analyzed the coverage of both broadcast and print media on the virus over a period of decades, finding that journalists in their reporting on epidemics and diseases acted as life savers by using their formulaic, dramatic, and fear-mongering coverage to impact the public's perceptions of the health crisis and stimulate pre-existing ideas and images about the country in which the pandemic was first discovered. The journalists created an'us and them' mindset between developing and developed countries, which promotes stereotypes (Moeller, 1999). This finding was also supported by Unger (1998) in his study analyzing the media coverage of Ebola in which the study discovered "othering" frames that gave the feeling that the threat was linked to far off areas. While Ellis (2018) studied the

dominant frames of the swine flu coverage, her paper discovered frames that refer to people's tendency to blame others for any crisis. In the swine flu example, media were blaming the Mexicans for the virus spread, using frames that enforce harmful stereotypes about Mexican people.

Viswanath, Finnegan and Gollust (2015) have stated that the digital and electronic media revolution has affected how the public can access health information, as recent health communication has been intensively impacted by multiple platforms that deliver and receive information. These platforms could be cable channels, internet websites, blogs, mobile phone apps, TV apps and social media outlets (Viswanath et al., 2015)

2. Pandemics and media coverage

"To members of the media: Yours is a critical role. This is the time for accurate reporting from official sources. Your role in an outbreak is not simply to chase the story; it is to perform a public service. Your actions are public health actions in every respect. You play a significant part in protecting the health and well-being of your fellow citizens."

— A joint appeal by the UN and the WHO to media urging them to have a constructive role in the pandemic coverage. (WHO, 2020).

All of the previous media research proposes that media coverage acts as a compelling medium during a pandemic (Cho and Gower, 2006; Vaughan and Tinker, 2009) as it needs reasonable interpretation of the current situation during crises to

help people assess the information by themselves (Gerwin, 2012, p.630). People across the globe perceive health crises through news media, which helps in building various public interpretations through the frames journalists use to highlight specific features (Dutton & Ashford, 1993). According to Coombs (2010), accurate information and timely communication with the public are the earliest steps to deal with the outbreak of an epidemic, which can help in the information's dissemination and the individual's decision-making. Media articulates the concept of a "disease" and journalists report then the majority of the public develop the disease's concept especially due to high interest in medical event (Cushman, 1989). Sometimes media can disseminate dominant interpretations by using some responsibility and risk terminologies that can provide a medium to support health communication (Rosling 2003).

According to previous literature, the media coverage of pandemics could be linked to three successive stages: "sounding the alarm," "mixed messages" and "hot crisis and containment" (Holland and Blood, 2010; Nerlich and Halliday, 2007; Ungar, 1998, 2008; Wallis and Nerlich, 2005; Washer, 2004; offe & Haarhoff, 2002;Vasterman and Ruigrok, 2013).

The first stage of an outbreak includes fearful claims that usually spread in the news media to confirm the potential of a novel infectious disease in which media can use metaphors to describe emerging infectious diseases to the uneducated audience, such as killers, plagues or hostile combatants in war (Wallis & Nerlich, 2005).

The second stage of a pandemic, according to scholars, is characterized by a combination of both panic and reassuring media messages. For example, according to Vasterman and Ruigrok (2013), during the second stage of the swine flu coverage, the media focused on all the preparations made for the public health and possible crisis

scenarios. The governments and public health sources communicated with the public to calm their panic, though several messages in the media indicated that everything was under control.

The third stage of a pandemic takes place when it becomes a "fact," which is often accompanied with a "crisis and containment" discourse, with various messages of virus containment and how it's being handled (Wallis & Nerlich, 2005; Vasterman and Ruigrok, 2013).

Since the 20th century, the world has been hit by several pandemics that decimated societies, determined outcomes of wars and wiped out entire populations, but also, paradoxically, cleared the way for innovations and advances in sciences (including medicine and public health), economy and political systems (Huremović, 2019). These pandemics include the Spanish flu (1918), the avian flu (1957), the Hong Kong Flu (1968), HIV/AIDS (1983), SARS (2003), the swine flu (2009), Ebola (2013) and COVID-19 (2020) (Appenzeller 2005; WHO, 2015;2020; Healio, 2016).

2.1 The Spanish influenza

The 1918 influenza pandemic was considered the worst infectious disease to hit the world in recent history, killing at least 50 million people across the world. About 500 million people (one-third of the world's population) became infected with this virus (Hume, 2000). According to Herring, in the Ethnohistory, the Spanish flu pandemic "ranks with the Black Death and the Plague of Justinian as one of the most destructive human afflictions" **(**Herring, 1984, p.80). Despite its name, the virus did not originate from Spain, but was named the "Spanish influenza" because Spanish newspapers were the first media to report on the outbreak (Flanagan, 2020). During World War I, Spain was a neutral country, so its journalists did not face the same

censorship in comparison with media in other countries, which were involved in the war (Flanagan, 2020).

The flu had a destructive impact on civilization. Some scholars believe that it affected the outcome of World War I, as it hit soldiers from the German army, as well as the Austrian–Hungarian Empire hard and was more virulent compared to how it hit the Allied forces (Price-Smith, 2009). The virus, moreover, affected many senior politicians, scientists and artists (Price-Smith, 2009). Though many survived (e.g.: Walt Disney, Greta Garbo, Raymond Chandler, Franz Kafka, Edward Munch, Franklin Delano Roosevelt and Woodrow Wilson), at least 50 million died according to CDC indices, including many famous people, such as the painters Gustav Klimt and Egon Schiele (Expressionist, 1987).

The flu rapidly faded from public and scientific attention, constructing a precedent for future pandemics, but it did not receive intensive media attention, leading some historians such as Crosby to call it, in his book, the "forgotten pandemic" (Crosby, 2003). One of the explanations for this minimal media treatment is that over a period of nine months, the virus peaked and waned very quickly before getting adequate news coverage (Crosby, 2003; Almond, 2006). Moreover, the virus was overshadowed by multiple important historical events, such as the culmination and end of World War I, which could be another reason for the minimal media coverage (Crosby, 2003; Almond, 2006). Scholars gave a third explanation as well. They said this is how societies usually deal with infectious diseases that spread quickly — at first people look at the outbreak with great interest, horror and panic, and then, as soon as it starts to subside, with dispassionate disinterest (Huremović, 2019, p:12). However, there is a scarcity of scholarly research on the media frames of the 1918 influenza epidemic.

A study by Hume (2000) showed that media coverage started to be positive with reassuring frames to calm down the terrified public. Messages such as there is "no serious consequences to the young and healthy" were common, but then fear and panic frames dominated the news stories with anxious terms such as "appalling," an "enemy," a "mysterious malady," a "pandemic disease," a "momentous peril" and a "scourge" that was "stalking" through the nation and "taking a ghastly toll from the whole population" (Hume, 2020, p.899 & 903).

To sum up, the study can conclude that media coverage on the Spanish influenza was not extensive due to political events that were occurring at the same period. This explains Scheufele's (1991) assumptions that there are multiple factors that can influence the process of frames creation or even modifications, such as structural, social, organizational, ideological and individual variables. Media scholars nonetheless found that fear frames were the most frequent in the coverage of the disease (Hume, 2000).

2.2 HIV/AIDS

HIV/AIDS is a global pandemic that has slowly progressed over many years, hitting different continents and infecting several populations (Huremović, 2019; Cullen, 2003). In early 1981, in the United States, the first case of the human immunodeficiency virus (HIV) was reported, which caused a major public concern due to its quick development into the acquired immunodeficiency syndrome (AIDS) that caused death (Huremović, 2019). The pandemic was initially spread among the gay community causing a high death toll, which resulted in social isolation and stigma among the infected cases (Huremović, 2019). Since the virus outbreak, at least 65 million people globally have been infected and 25 million have been killed.

Moreover, the disease causes at least one million fatalities each year across the globe (It caused two million deaths in 2005) (GBD, 2016; UNAIDS, 2006, p. 3).

Several studies have investigated the media coverage and dominant frames of HIV/AIDS in various countries including the United States, Uganda, China, India, Singapore and South Africa (Pickle et al., 2002; Hawkins, 2010). The majority of them discovered that the most frequent frames presented in the media coverage were moral, health, political and assets. Moral frames refer to the ethics of the infected cases and the relationship between the alleged immoral behavior and the virus outbreak. Health frames defined HIV/AIDS as a public issue that needed an urgent systematic plan, treatments and prevention strategies (Pickle et al., 2002; Hawkins, 2010). Political frames were also frequent, which refers to decisions and public policies that have been developed to contain the disease. Assets frames were also present in the media coverage of HIV, which includes the successes of organizations dedicated to helping African-Americans overcome the HIV/AIDS crisis. (Pickle et al., 2002; Hawkins, 2010).

The scholars, meanwhile, discovered some sub-frames, which were economic factors including social/cultural factors, racial bias, indirect government responsibility, news and African-American denial (Pickle et al., 2002; Hawkins, 2010). Moreover, framing studies on the African-American population explained the best ways communicators can effectively frame the messages to the public in order to get the support needed from the Black community (Pickle et al., 2002; Hawkins, 2010).

In terms of media coverage of the disease, a review study by journalism educator Trevor Cullen (2003) summarized a number of previously published studies

about media coverage of the disease in three regions: The United States, Southern Africa and Papua New Guinea (PNG) over 25 years. One of these studies, which the author presented, is a comparative study of the news coverage of HIV/AIDS in Europe and the United States from 1981 to 2002 and the US role in global health policy. The study was published in 2004 by the Henry J. Kaiser Family Foundation (KFF) which is a US non-profit organization that focuses on national health issues. The study comprehensively analyzed more than 9,000 HIV/AIDS related news stories in four national newspapers: *The New York Times, the Wall Street Journal, the Washington Post and USA Today*; three regional newspapers: *The San Francisco Chronicle, The Miami Herald, The Los Angeles Times*; and stories from *The Times* in London, England. The sample included 8,783 stories; 8,173 were from US newspapers and 610 stories were from the Times.

The study discovered that total press coverage about the AIDS pandemic surged noticeably during the 1980s, reached its peak in 1987 and dropped steadily from then to 2002 (KFF, 2004). There were few peaks in the coverage which came in conjunction with major developments in the epidemic (KFF, 2004). For example, the news escalated when basketball player Magic Johnson announced in 1991 that he lives with the virus (KFF, 2004). Moreover, the study showed there were five major stories that dominated the news over the 21 years of analysis. These stories covered the following: preventive measures (18 %), the latest updates on medical research (13 %), ways the virus could be transmitted (13 %), and discrimination and stigma (10 %) (KFF, 2004).

A systematic review published by the Panos Institute (2004) investigated news coverage of the disease in eight southern African countries in the time period from 1985 to 2003. The countries included South Africa, Botswana, Malawi, Lesotho,

Namibia, Swaziland, Zambia and Zimbabwe. The study used both qualitative and quantitative analyses of newspaper articles and used random samplings to select articles for analysis. The study cited work by Tapfumaneyi and colleagues (2004) and Cullen (2003) and revealed a lack of public understanding during the early 1980s due to content sensationalism, as the media used fear-mongering words, such as killer and victims. By the 1990s, the study mentioned, language was positively replaced with the 'PLWA' (People Living with AIDS) and "AIDS pandemic". The study, moreover, stated that there was also a push to widen the coverage and use other angles such as development plans rather than a purely health related topic. There were two opposite sides of news reporting: there were negative news stories with scary statistics and emotional photographs of bony, infected people, while on the other hand, there were hopeful articles with news of antiretroviral drugs (ARVs) that were discovered (For detailed information see Tapfumaneyi, et al, 2004; Cullen, 2003).

In conclusion, past scholarly studies discovered that media coverage of HIV has developed significantly throughout the years. During the early stages of the outbreak, media reporting was very limited and censored., At that time, frames of fear, ethnicity, stigmatization and blame were the most frequent. Gradually frames of development and virus containment were introduced (Panos, 2004; Pickle et al., 2002; Hawkins, 2010; KFF, 2004).

3. Major frames in modern pandemics

Media is an important agent amid 21st century pandemics (Mutua, S. N., & Ong'ong'a, D. O. 2020). Going through literature on health crisis communication and pandemic research, the biggest number of studies included SARS, Ebola and the swine flu (Reynolds and Quinn Crouse, 2008; Zhao and Xiang, 2019),). The goal of reviewing this literature review was to identify the most dominant frames in previous

studies on media coverage of health risks; to discover how news frames could relate to each other and to Entman's framing functions; and to assess the dominance of each frame in health-risk reporting, and to account for the variations observed.

3.1 SARS

In early 2003, severe acute respiratory syndrome (SARS) garnered global attention. The WHO initially declared the disease a type of pneumonia (Washer, 2004). On March 13, the WHO announced that SARS was a global epidemic after a rapid increase in the number of infected cases. Several hundred people became ill in many countries, such as Singapore, along with numerous cities and states around the world including New Jersey, Toronto, Bangkok and California (Zambon & Nicholson, 2003; Update 95 - SARS: Chronology of a serial killer, 2015).

SARS received a wide response from the public health community internationally and locally as however the pandemic was contained in few months, it was doubtful if it could ever be halted (Wallis & Nerlich, 2005). SARS was mentioned from a globalized perspective and framed as a 'global threat' (Wallis & Nerlich, 2005). The pandemic grabbed a wide international media attention and intense coverage (Abraham, 2007; Wallis & Nerlich, 2005) and several studies analyzed the media messages and the dominant frames used by the media (Washer 2004; Wallis & Nerlich, 2005; Beaudoin, 2007; Tian and Stewart 2005; Berry, 2007; Warf-Higgins and Naylor 2007; (Luther and Zhou, 2005).

Three scholars in two different papers studied the British newspapers' coverage of SARS, discovering the most used metaphors in the media were military and war-related words such as "killer," "deadly" and "dangerous threat," but then it changed to more of a containment frame. (Wallis & Nerlich 2005; Washer 2004).

British newspapers called SARS the "the next plague," expecting a catastrophic number of deaths (Washer, 2004). The scholar attributed these metaphors to the international panic that arose from SARS, which he defined as: "where the saturation and speed of the world news media's coverage of the disease put fear in the hearts and minds of citizens" (Washer, 2004, p. 2570). Washer (2004) examined the way SARS was depicted in British newspapers by using the social representations theory, particularly the existing literature on social representations of HIV/AIDS and Ebola to understand how the epidemic was utilized by the media. The study analyzed the four weeks following the first story published in the British media about the pandemic, examining how the initial media coverage to this new threat was articulated. The papers analyzed all the articles that mentioned SARS only on the Sunday edition of the British national newspapers (*Independent on Sunday*, *Mail on Sunday*, *News of the World*, *Observer*, *People*, *Sunday Express*, *Sunday Mirror*, *Sunday Telegraph* and *Sunday Times*). The study found that at the beginning of the outbreak, the virus was reported as a "killer bug" or a "mysterious," "lethal," "untreatable" and "deadly pneumonia virus." The news coverage used words such as "moving at the speed of a jet" to describe its speedy spread (Washer, 2004).

According to Washer (2004), the SARS outbreak occurred at roughly the same time as the US and UK invasion of Iraq. This caused the media to connect SARS to "bioterrorism" and also led to the conclusion that the combination of the pandemic and the war would destroy the economy. In another study, authors analyzed the frames used by CNN and the BBC in covering the SARS epidemic and found that the dominant frames were about the spread of the pandemic and its effect on public health, in addition to other frames, such as the economic consequences and control frames (Tian and Stewart 2005).

Three scholars studied several health topics, including SARS, along with other infectious diseases in the Canadian media (98 print newspapers, 5 radio, 8 TV and two news wires) for five years (from January 1999 to December 2003). They found a huge amount of SARS media content in only one year that surpassed the coverage of any other health topic throughout those five years, apart from the topic of smoking (Berry, Warf-Higgins and Naylor 2007). The study found that media used a "symbolic connotation" for the pandemic, describing it as being "deadly," (which was described 17 times) and "mysterious" (12 times). Moreover, the study discovered that the news media often uses experts for health-related topics. (Berry, Warf-Higgins & Naylor, 2007).

In the literature of SARS media frames, there are few comparative studies conducted to understand the difference between how the US and China covered the SARS pandemic. Luther & Zhou (2005) proposed in their study that Chinese media have adopted US news values. They, moreover, argued that the difference in political systems in each country would "set the boundaries" for the media to use some frames instead of others; the study analyzed *The New York Times and The Washington Post* in the United States and *The Chinese People's Daily* and *China Daily* in China. The results indicated that the main frames that were used by the US news coverage were the same as those dominant in the Chinese media This showed the adoption of western news values used by the Chinese journalists in their coverage (Luther & Zhou, 2005). Despite the frames' similarity, the authors found that the manner and the tone of the frames varied. The frames that were dominant were economic consequences, conflict, leadership, human interest and individual responsibility (Luther & Zhou, 2005).

For example, US media used more conflict, economic consequences and leadership frames, while frames of responsibility, leadership and economic consequences were found in the Chinese media with a positive perspective shedding light on the efforts exerted by the government to contain the negative impacts on the economy (Luther and Zhou, 2005). The conflict frame was used by the US press highlighting the conflict with China, while the Chinese media did not include any internal conflict; it only highlighted the external conflict (Luther and Zhou, 2005). Moreover, the human interest frame was used differently in both countries; US media covered the negative impact of the SARS pandemic on people's lives and missing their loved ones. On the contrary, the Chinese media covered the positive side of the frame, presenting stories of people who were recovering from SARS, families who overcame economic woes and the public's morals (Luther and Zhou, 2005). The study mentioned that both countries used the "leadership" frame in their coverage, which gives an indication of its prevalence in international oriented stories. (Catherine, Luther 2005).

Beaudoin (2007) conducted a comparative analysis of the frames used in the SARS coverage in two polarized media systems, the US and China, analyzing 226 news stories from Xinhua news agency and 226 stories from the Associated Press (AP) in the period from January 1, 2003, to February 26, 2004. The study used two units of analysis: the story and the word count. It found that the prevalence of severity and attribution of responsibility were higher with AP. Additionally, while the story frames of economic consequences were more common in AP, the word frame was higher in the Xinhua news agency (Beaudoin, 2007). The study, moreover, discovered that the economic consequence for both types of measurements has faded over time. Conversely, severity, human interest and attribution of responsibility have risen

(Beaudoin, 2007). Another study demonstrated the approach of "securitizing infectious diseases" that have been used by Taiwan in framing health crises such as SARS, in order to reach a specific target (Rollet, 2014, p.142). The study found that Taiwanese authorities considered SARS a national security threat. For example, news in TV and newspapers used images that showed the military taking care of the patients, similar to wartime situations (Rollet, 2014).

3.2 EBOLA

Ebola is one of deadly pandemics in history. Since 2014, it has infected more than 30,000 people and killed at least 11,000 due to the males' survivors from sexual transmission (WHO, 2015; McNeil, 2015). The 2014 outbreak was not the first for Ebola, but it was the "biggest and most complex Ebola outbreak in history" (Redlener, 2014). The outbreak began in Guinea in March and spread very fast to neighboring Liberia and Sierra Leone. After a few months, it became a "public health emergency of international concern" (CDC, 2014, Para.5). The first Ebola case was confirmed in the United States on September 30, 2014. The patient died a week later in Dallas, but a hospital worker was infected while treating the patient. The infected cases rocketed, which garnered media and public attention, becoming the "most severe acute public health emergency seen in modern times." (Bruce, 2014).

Several scholarly papers were released to analyze the prevalent frames of Ebola used by mass media (Pieri, 2018; Zahang, Bie & Billings, 2016; Barker & Geana, 2018; Humphries, Radice & Lauzier, 2017). Pieri (2018) analyzed the coverage done by the British media to determine the most dominant frames used by the press. The researcher used a number of time snapshots in the news analysis, going through the pandemic in three stages: the outbreak, the peak and the containment

(Pieri, 2018). The dominant frame during the first snapshot (January 1 to May 1, 2014) described the Ebola pandemic as a "localized African crisis" with around 31 articles, including news about the pandemic outbreak, fatalities and the spread of the virus across borders (Pieri, 2018, p.80). Then the scholar analyzed 15 articles during the peak of the pandemic (June 16-30, 2014), discovering different frames, such as "worst pandemic," "out of control crisis" and "regional crisis." The news coverage in the UK media notably increased after September 2014, which was when the WHO declared Ebola "an emergency and international concern" after the first US death, which caused frames to change to "panic over contagion" (Pieri, 2018, P: 80).

Luisi, Barker and Geana (2018), moreover, investigated the Ebola frames used by the US media analyzing 718 stories from *The Wall Street Journal, The New York Times and USA Today*, over a period of two months (from September 30 to December 2, 2014). The study found that three major frames were dominant: conflict, action and human interest, while other frames had been found, but with a limited presence such as economic frames, mortality and responsibility (Luisi, Barker & Geana 2018). Humphries, Radice & Lauzier (2017) A comparative study analyzed the frames used by news articles in Canada (the Globe and Mail) and Nigeria (Vanguard) in a time frame between January 1 to December 31, 2014, finding that the Canadian newspapers framed Ebola as a "national security threat," "an international humanitarian crisis" and "a grave risk." The coverage included stories about the Canadian responsibility to combat the virus spread of Ebola before crossing the western countries' borders (Humphries, Radice & Lauzier, 2017, p.1). Other topics were also dominant, such as the US aid agencies' efforts to contain the disease (Humphries, Radice & Lauzier, 2017).

Another comparative study conducted by Baidoo (2016) investigates media frames in the United States and Sierra Leone of the Ebola pandemic in West Africa. It disclosed that 52.5 percent of the articles analyzed were dominated by "complaint super-frame," which intensively spoke about the virus's severity, dangers associated with the virus and the reasons behind the spread of the virus. The second prevailing frame was the response frame which were found in 45.8 percent of the articles. This focused on the efforts and strategies governmental organizations, medical and non-medical entities and international aids organizations utilized to contain the spread of the virus (Baidoo, 2016).

Another study in Nigeria analyzed two daily newspapers to understand the frames used in the media coverage of Ebola. The study found one-third of a total 840 news stories were on the "treatment and control" frame, which reflects the newspapers' responsibility in impacting people's behavior towards containing the virus and curbing its spread (Adelakun & Adnan, 2016). Moreover, 8.7 percent of the stories focused on the effect frame, which shed light on the pandemic's effect on humans and the environment, and it tends to have a negative tone. The researchers discovered other frames, such as sensitization/mobilization (7.9%), sabotage and conspiracy (5.1%), and causes and transmission (7.6%). There was also rumor and misinformation (4.3%), consolation and support/aid frame (3.9%) and government/political influence. (5.5%). The least featured frame was stigmatization/discrimination with only 2% (Adelakun & Adnan, 2016).

After presenting the literature review, it can be concluded that the major and dominant frames discovered by scholars who analyzed the Ebola media coverage, were the fear, blame, conflict human interest and effect frames (Adelakun & Adnan, 2016; Pieri, 2018; Barker & Geana 2018).

3.3 Swine Flu

In April 2009, the world was hit by the first influenza pandemic in more than four years: the swine flu (H1N1) (CDC, 2010). It was initially discovered in Mexico and rapidly crossed the US border, later sweeping the globe and raising concerns as it unexpectedly affected young and healthy people. In June 2009, the swine flu was declared a "global pandemic" by the WHO. Experts were saying that it had similar characteristics to the "deadly Spanish flu" that killed 40 million to 100 million people (Taubenberger & Morens, 2006; WHO, 2010, 2012; Krishnatray and Gadekar, 2014). Media coverage of the swine flu was intense and was blamed for causing a wave of panic and hysteria among the public (Krishnatray & Gadekar , 2014). Epidemiologists named the pandemic an "iatrogenic pandemic of panic," an artifact describing the treatment created by public health representatives and media covering the health crisis (Bonneux & Van Damme 2010, p.1308). Other scholars said the media was a "fear-mongering" "puppet" that served the interests of specific powerful bodies (Wagner-Egger and colleagues, 2011. P, 461). The general manager of the WHO, Margaret Chan, and Keiji Fukuda, the assistant director general, both said that the media intensified people's perceptions of the virus's risk (Durodié, 2011).

Several scholarly studies have investigated the most common and frequent frames used by media coverage of the swine flu across multiple media outlets and countries. Krishnatray and Gadekar (2014) found that Indian media have been dominated by four main frames: the attribution of responsibility, action, human interest, and fear and panic. The news stories were full of frightening words and phrases, such as dreaded virus, mystery, deadly flu, failure of precautionary measures and failure of medical treatment (Krishnatray and Gadekar, 2014).

Another study investigating the US coverage of the swine flu outbreak analyzed four newspapers: T*he Washington Post, the New York Times, The Los Angeles Times* and *The Houston Chronicle* from April 1 to May 31, 2009 (Elis, 2018). It found that the fear frames were prevalent, especially in the first week after the outbreak. Specific words that triggered public fear were used, such as "deadly" and "scrambling," in addition to terms that refer to chaos, fear and urgency (Elis, 2018). The paper also discovered "othering frames" that refer to people's tendency to blame others for any crisis (Elis, 2018). The newspapers used words and terms suggesting that the swine flu was an external threat brought by the Mexicans to the United States. That mindset was presented by making a comparison between the US and Mexico's public health strategies (Elis, 2018). According to Elis (2018), these frames were inciting negative stereotypes of Mexican people, such as illegal attempts to cross the US border, the ignorant, poor population and corrupt regime.

Fogarty and his colleagues (2011) conducted a content analysis on television coverage of H1N1 in Australia from April 25 to October 9, 2009. The study found that stories about the swine flu were leading the news for almost 24 weeks and were among the top five news stories for 20 consecutive weeks (Fogarty et al., 2011). The coverage was dominated by fatality rates, the pandemic spread, people who are highly vulnerable to the disease and government strategies.

A research study analyzed the coverage of Dutch newspapers and TV from April to December 2009, to discover the dominant frames, coverage used, content and volume (Vasterman and Ruigrok, 2013). Both scholars investigated the frames through three stages of the pandemic. In the first two weeks of the virus outbreak in Mexico, the media showed news about the pandemic using fear-mongering terms and metaphors such as "global threat" and stories about previous epidemics such as the

Spanish flu (Vasterman and Ruigrok, 2013). The news media coverage in the preparatory stage extended from May 10 until October 23. The media paid attention to government health preparations and scenarios of crisis. After the WHO announced that the virus was a global pandemic, fear frames were intensively found in the Dutch media that exaggerated the term "global pandemic," not taking into consideration the difference between swine flu, which has mild symptoms, and other pandemics (Vasterman and Ruigrok, 2013). In the last stage of analysis (from October 24 to December 28, 2009), the swine flu became a pandemic in the Netherlands (October 23), so the media was highlighting mainly people's anxiety after the increasing number of deaths and controversy over the vaccine and its safety (Vasterman and Ruigrok, 2013).

A comparative study between media frames in Sweden and Australia found that media messages and frames were the same in both countries, though there were some differences in frames of uncertainty, responsibility and self-efficacy (Sandell, Sebar & Harris, 2013). The responsibility frame in Australia was negatively highlighted with criticism of several organizations for their lack of transparency, while the media in Sweden put the responsibility on the people's shoulders to safeguard the public health, as media was very transparent about virus updates (Sandell, Sebar & Harris, 2013). While the economic frame was not significant in both countries (Australia 20%, Sweden 8%), it should be noted that half of the Australian sample in the economic frame was negative (burden of cost to tourism and sports), and all of the Swedish articles were positive (successful vaccinations saving 2.5 billion Swedish kronor) (Sandell, Sebar and Harris, 2013).

After reviewing the literature, it is clear that the most dominant frames discovered by scholars in the media coverage of the swine flu were: attribution of

responsibility, fear, human interest and conflict frames (Sandell, Sebar & Harris, 2013; Vasterman & Ruigrok, 2013; Krishnatray and Gadekar , 2014).

3.4 COVID-19

On December 31, 2019, the WHO reported a number of pneumonia-like cases from unknown cause in the Chinese city of Wuhan. The illness was later identified by the Chinese authorizes as being a new coronavirus strain, first named "2019-nCoV" and subsequently COVID-19 (WHO, 2020). A coronavirus is defined by the WHO as a large virus family that can cause illnesses ranging from mild to severe. (WHO, 2020). The novel strain showed some similar features to the Middle East respiratory syndrome coronavirus (MERS-CoV) and severe acute respiratory syndrome coronavirus (SARS-CoV) infections and it has been proven to spread very fast and have a high rate of mortality (Assiri et al., 2013). The number of infected cases grew rapidly outside China which resulted in an official announcement by WHO Director-General Dr. Tedros Adhanom Ghebreyesus on March 11, 2020, declaring COVID-19 a global pandemic. The number of cases worldwide reached 119 million in March 2021, with 114 countries reporting cases by October 2020and 2.64 million deaths recorded (World Meter, 2021).

A massive wave of information about the pandemic has been spread widely and randomly, causing a case of "misinformation" (Mheidy & Fares, 2020). The Director-General of the WHO described the misinformation phenomenon as a dangerous "infodemic" in which fake news spread more rapidly and swiftly than the virus itself (Yuan et al., 2020). The spreading of fake news is common since the Middle Ages (Zarocostas, 2020). The influence of social media platforms, however, acts as an escalator to misinformation and misleading news because the increasing

number of unverified sources play a significant role in reporting an inaccurate number of infected cases. Additionally, they promote unapproved medications or incorrect treatments (Mheidy & Fares, 2020), which cause anxiety among the public, as well as chaos, financial abuse, panic buying, fraudulent schemes and fear (Besson, 2020; Mheidy & Fares, 2020). The WHO later announced that it will work in tandem with various social media channels and search engine companies including Facebook, Google, Pinterest, Tencent, Twitter, TikTok and YouTube to curb the spread of fake news and inaccurate information.

On the other hand, since the virus outbreak, both international and local news outlets have worked to raise public awareness and decrease anxiety by airing live coverage of public health organizations' press briefings and updating press conferences (Mheidy & Fares, 2020). Moreover, media disseminated precautionary measures, public health guidelines and government instructions to contain the virus (Mheidy & Fares, 2020).

There are several studies in the media and communication literature that attempted to understand the dominant frames and themes in the news coverage of COVID-19 (Basch, Kecojevic & Wagner, 2020; Poirier, Ouellet, & Rancourt, 2020; Mutua & Oloo, 2020).

Mutua & Oloo (2020) investigated the media coverage of the first two months of the pandemic's outbreak by international media outlets including the *BBC, Al Jazeera, The People's Daily* and *CNN.* The study discovered that most stories analyzed in the five news channels included the economic consequences frame, though the CNN stories were more dominated by impact and human interest frames,

while the attribution of responsibility frame prevailed in *The People's Daily* (Mutua & Oloo, 2020).

The study has found several themes in the news coverage. The most dominant theme in three media outlets of the sample was xenophobia, which came in the economic consequences and attribution of responsibility frames. In a story published by the BBC, they reported the Chinese as "the people who aim to spread the disease to the rest of the world" (Mutua &Oloo, 2020). Other themes have emerged, such as geopolitics and international relations, which were dominant in both the BBC and CNN, in addition to crime stories relating to COVID-19 ranging from protests to massive hoarding of food necessities (Mutua & Oloo, 2020). Moreover, all the sample media organizations reported stories about fake news, disinformation and conspiracy theories (Mutua & Oloo, 2020).

Poirier and his colleagues (2020) analyzed the front pages of twelve media outlets in Canada (anglophone and francophone), finding that Canadian media in the beginning introduced the virus in February as a "Chinese outbreak." Then when the crisis evolved within the country health crisis and economic frames were more dominant, while other frames were present but varied from one media outlet to another, such as the "social impact" frame (Poirier, Ouellet, & Rancourt, 2020). Another study qualitatively analyzed the news stories of *The New York Times* between January 6 and April 5, 2020. The study revealed two prominent frames which are: coronavirus is a "deadly Chinese virus" and "the Chinese government is to be blamed for the virus" (Lin & Le Pham, 2020).

In the first frame, the researchers found that NYT journalists used controversial and stigmatizing terms to name the pandemic such as Wuhan virus,

Wuhan coronavirus, Wuhan pneumonia, China virus and Chinese coronavirus. According to Lin and Le Pham (2020), ethnicity or attaching a location to a new pandemic raises people's stigmatization and enhances bad stereotypes (Lin & Le Pham, 2020). The second dominant frame in the NYT coverage is that the Chinese government was blamed for the virus outbreak. The coverage used biased terms such as "the silencing of the so-called whistleblower Dr. Li Wenliang," "China's coronavirus cover-up" along with the comparisons that have been made between the novel coronavirus and the SARS crisis in 2003 (Lin & Le Pham, 2020, para.7).

Another study analyzed the online media coverage in Nigeria and discovered various patterns of frames used for the coverage of the COVID-19 pandemic (Chukwu et al., 2020). The authors analyzed three Nigerian media outlets which are: *Sahara Reporters, Premium Times and the Daily Post*. The first month of the study showed that the three newspapers were dominated by death and panic frames, with many hard news about the death toll in highly infected countries such as China, Italy, Spain, the United States and Germany (Chukwu et al.,2020). Moreover, the study found that media messages shed light on the government decision to implement the lockdown and the possible impacts on the economy and the need for "palliatives" to overcome the quarantine (Chukwu et al., 2020).

Another study investigated the coverage of the COVID-19 pandemic in online versions of the highly circulated US daily newspapers (Basch, Kecojevic & Wagner, 2020). The study discovered that the top five themes that appeared in news articles dealt with the financial impact of the pandemic (11.6%), then followed by stories of affected individuals (7.0%). The fatality rate came as a third theme (6.8%), followed by preventative measures and public health recommendations to the public (6.2%) and finally stories about quarantine were the least presenting with (5.9%) newspapers

(Basch, Kecojevic & Wagner, 2020). The authors, moreover, found emerging themes in the sample, such as the impact on economy, government and societal efforts to mitigate the spread of the virus, stories about employees working from home, health disparities, the reliable scientific studies on COVID-19 and the impact of the supply chain.

Other scholars, Krawczyk, et al (2020), analyzed 26 million news stories from the front pages of 172 top online news sources across 11 countries from January to October 2020. They found that COVID-19 coverage represented nearly 25 percent of all those front pages. Moreover, they discovered a heterogeneous media coverage on the pandemic; 16% of this coverage consisted of articles that have a highly negative tone with topics about fear, crisis and fatalities rate.

To summarize, the literature showed that frames of fear, morality, ethnicity, blame, economic consequences and attribution of responsibilities were the most prevalent in the media coverage of COVID-19 (Krawczyk, et al, 2020; Basch, Kecojevic & Wagner, 2020; (Mutua & Oloo, 2020; Poirier, Ouellet, Rancourt & Rancourt, 2020; Lin and Le Pham, 2020; Chukwu et al., 2020).

4. News values during a health crisis

News values are important for the process of news selectivity, which was explained by Lippman (1922) and then Galtung & Ruge (1965). Galtung & Ruge (1965) wrote a study on the coverage of media in Norway to the international news. The study proposed that if reporters wrote unbiased news as much as possible, the event's selection to be a news piece will reflect the public's bias as being "selectors".

Their findings became a conceptual model for further media studies (Galtung & Ruge, 1965: 65).

This study relies on the pioneering study of Galtung and Ruge's (1965) and Harcup and O'Neill's (2001) follow-up studywhich introduces a set of news values criteria. These news values include celebrity, the power elite, surprise, entertainment, , bad news, good news, , relevance, follow up, magnitude and newspaper agenda (Brighton & Foy, 2007). In the news values' hierarchical model of Shoemaker and Reese (1996), news is impacted by multiple factors, such as newsroom practices, the ideological values of the news entity and the journalists working there. On the other hand, Shoemaker and Cohen (2006) explained the elements of social significance to investigate newsworthiness, which has three main types: social change, statistical, and normative. While, the social significance is defined as "relevance for the social system" in relation to four aspects: cultural, economic, political and public (pp. 7, 15, and 49).

A pandemic or a health crisis matches perfectly with all the news value criteria (Galtung and Ruge,1965 ; O'Neill and Harcup, 2009), including unexpectedness (sudden outbreak), intensity increase (high number of fatalities), negativity (catastrophe chances), consonance with expectations (a novel disease which was expected), relevance (actual risks involved), meaningfulness (fear of epidemic, personal risks), continuity (daily updates) and unpredictability (if it's a severe pandemic) (Vasterman &Ruigrok, 2013). Predictability, for example, is very important in reporting new risks, as after the outbreak of a novel disease it is very difficult to forecast the spread of the virus, the seriousness of the symptoms and the mortality rate (Vasterman &Ruigrok, 2013). In general, experts discuss several different options, but the media have a bias in favor of the worst-case scenarios, as

these have a higher news value (House of Commons, 2011). Research on coverage of the avian flu in US newspapers showed that worst-case scenarios were present in over 40 percent of all articles (Dudo et al., 2007). When Smith and colleagues (2012) in their paper Understanding newsworthiness of an emerging pandemic: International newspaper coverage of the H1N1 outbreak, analyzed the news values in twelve countries, they discovered the crucial role of "proximity" news value during novel pandemics. Despite the intense coverage of the swine flu as a global issue, it grabbed more attention when each country faced a domestic outbreak (Smith et al., 2012). The researchers explained that local cases created more newsworthy events, such as government strategies, local people's experiences and local resources. The study concluded that even under a health crisis, such as a pandemic, localized risks have more newsworthiness.

According to Galtung and Ruge (1965, p.72), coverage depends mainly on the "events newsworthiness", and due to limited space in the print newspapers and time for other media sources, the news construction is based on selections process in which the events, sources and topics need to "fit the journalists" (Althaus & Tewksbury, 2002; Gans, 1979). And despite the big number of sources, the mainstream media outlets come prior to the source of information for the public (Mitchell et al,, 2016). Even in the age of selective exposure and multiple sources, research into inter-media agenda setting disclosed a correlation between the content reported by the big media entities and the salient topics in other media platforms, such as social media (Conway et al., 2015). For any diseases to become newsworthy, according to Moeller (1999s), they need to be of the same standard as "Ebola" in terms of emotional appeal, prominence, novelty, sensationalism and controversy. Pandemics fit these criteria as they are dramatic, spread very fast, cause thousands of deaths, and cause political and

economic crises (Lee, 2008). So when pandemics are considered newsworthy, they will be disseminated by journalistic routines (Scanlon & Alldred, 1982).

Researchers found that media coverage during health crises, such as mad cow disease, the West Nile virus and the avian flu, was "event-based," as it brought attention to some pandemics and made the public ignore others (Shih, Wijaya, & Brossard, 2008). For example, the researchers found that the media coverage paid more attention to government strategies, actions and the increasing number of infected people (Shih, Wijaya, & Brossard, 2008). They discovered that the reporters used action and consequences in their pandemic-related stories in *The New York Times* (Shih, Wijaya, & Brossard, 2008). Other researchers found that diseases sometimes are politicized as health care and scientific research are part of the government actions (Hong, 2014).

5. Media landscapes and COVID-19 news coverage: Sweden, Egypt and the United Kingdom

5.1 Sweden

Sweden is described as a perfect example for a "democratic corporatist media system" (Hallin & Mancini 2004), which has influential public service media entities that provide national and local news on TV, in newspapers and on the radio, combined with a rising degree of quality newspapers consumption (Widholm, 2018; Westlund, 2017). Similar to other Scandinavian countries, media policy in Sweden is a system which blends commercial and non-commercial news to serve all public needs (Syvertsen et al. 2014). Sweden is newspaper-centric (Holmberg & Weibull, 2010). At least 75 percent of the Swedes read a morning newspaper for at least five days a week and a tabloid at least three days per week (Holmberg & Weibull, 2010).

Most newspapers subscriptions in Sweden go to local editions. There are only four national newspapers and the rest are all tabloid, either both format and style (*Expressen and Aftonbladet*) or only in format (*Dagens Nyheter and Svenska Dagbladet* (*Strömbäck*). (The media landscape, n.d.).

Many Swedish newspapers started online versions in the mid-90s and now almost all the newspapers in Sweden have digital platforms, but they are not a big source of profits (The media landscape, n.d.). Converting traditional readers to digital ones is nonetheless increasing, especially with the decrease of printed newspapers (The media landscape, n.d.). Many newspapers have started a Sunday edition of the paper as online only, in order to attract readers (and advertisers) to the digital edition.

The most popular news websites are *Aftonbladet* and *Expressen*, which have been gradually replaced by the online versions. Both newspapers are the only Swedish media outlets that have succeeded to boost their advertising sales due to their wide online reach, which compensated for the drop in newspaper circulation.

The Swedish newspaper industry is under pressure due to tension between commercial news and public service broadcasters, along with a growing popularity to seek news from Facebook and Google, which pushed the Swedish government to hold an inquiry in 2015 (Media Inquiry) to investigate the case. It published a detailed report in November 2016 with various suggestions to improve media policy in the future. Most importantly, it provided new subsidies to commercial news media in the digital age (Westlund, 2017) (The media landscape, n.d.).

Sweden has a strong position as one of the top countries with mobile news consumption. Swedish news publishers invest more money in mobile news apps and mobile optimized websites. According to the Digital News Report published by the

Reuters institute for the Study of Journalism and Oxford University, 69 percent of Sweden reads news from smartphones, 86 percent of the people use online news content from news websites and social media networks, and 70 percent rely on the television as their source for information (Westlund, 2017).

In Sweden, the public trusts the media and believes in its role in society (Mitchel et al., 2018). A study was published by Pew Research Center to understand people's perception of the news media in eight European countries: Germany, Spain, the Netherlands, Denmark, France, Italy and Sweden (Mitchel et al., 2018). The study found that Sweden had the most positive impressions of the media. At least 95 percent of the Swedish public believe that the news media is important, while 61 percent said it's "very important" (Mitchel et al., 2018). The media coverage of COVID-19 in Sweden was "less alarming." according to a study conducted by the Swedish nonprofit organization Public & Science (Vetenskap & Allmänhet, 2020). VA, along with colleagues from Södertörn University and the Karolinska Institute, have worked on a study to understand people's perception about the coronavirus and the information they receive from the media about the pandemic. They used three surveys at various periods, from March 18 to 23, April 2 to 5 and then April 21 to 24. The study confirmed that the Swedish public has a high level of trust in the government's decision and this confidence grew from 60 percent of the sample in the first survey to 72 percent percent in a second survey. The respondents of the survey showed also their high confidence in the public health sector with 91 percent, researchers with 86 percent and expressed moderate trust in politicians with 40 percent. On the other hand, the study showed little trust in the journalists themselves, as only 17 percent of the respondents showed trust in the media. The majority of Swedes viewed Swedish media coverage of the coronavirus in a positive way; 71 percent of the sample

believed that reporting gave them the information needed to a “fairly or very large extent.” Moreover, percent of the sample believe that news reporting was transparent to a very large extent and 48 percent perceived Swedish media covered several angles and point of views in their reporting.

5.2 Egypt

Egypt has one of the most established and influential media industries in the Middle East (Fanack, 2016). It has a number of government and privately owned media along with the Egyptian Radio and Television Union (ERTU), which supervises broadcast media (El Shaer, 2015). Television is the most popular communication medium that reaches almost all Egyptians (Allam, 2018). At least 98.8 percent of Egyptians have television sets in their home. Television is the most common source of news as more than 94.1 percent of the public use TVs to follow the news at least once a week. Around 84.2 percent use it daily or most days (Allam, 2018).

Egypt has government, partisan and privately owned newspapers (Allam, 2018). The government owns the three main daily national newspapers: *Al Ahram*, *Al Akhbar* and *Al Gomhuriya*. All of them depend on government subsidies and advertisements as funding mechanisms (Allam, 2018). Privately owned newspapers were introduced into the Egyptian market in 2004, and the main three private newspapers are *Al Masry Al Youm* (2004), *Al Youm7* (2008) and *Al Watan* (2012). In October 1993, Egypt introduced internet to the country, which acted as a catalyst for a transformation of the media landscape, in addition to the penetration of social media channels such as Facebook and Twitter (Abdulla, 2006; Atia, 2006; Iskander, 2006; El Shaer, 2015).

The revolution of 2011 changed audience behavior and the media system dramatically (Khamis, 2011; Abdulla, 2014; Allam, 2018). According to Allam (2018), it was named the "Internet Revolution" or the "Digital Revolution," as social media platforms were a mobilizer for the people to demonstrate. Since that time, people have become more dependent on digital platforms, and news organizations understand the need for digital transformation to offer timely news. This has caused business models to restructure. Most newspapers now have a print presence, a website and social media channels to reach a bigger audience and monitor interactivity (Allam, 2018).

In Egypt, there are no organizations that study audience behavior, but various interviews conducted with senior level managers of both government and private newspapers found that people in Egypt use social media as a "secondary tool" after search engines to reach online content (Allam, 2018). A report released by Arab Social Media Report in March 2017 stated that a least 30 million Egyptians are using Facebook, 1.7 million are Twitter users and at least 800,000 people are on Instagram (Allam, 2018).

The study reviewed previous Egyptian studies in both Arabic and English of past health crises, trying to understand how the Egyptian media framed the topics and what the news values were. (i.e. Al Nagar, 2010; Zakzouk, 2016; Othman, 2007). Zakzouk (2016) analyzed the frequent frames used by Egyptian media coverage to Hepatits C from 2014 to 2016. He found that the most frequent frames were: attribution of responsibility (government efforts), morality (precautionary measures) and fear (the outbreak of the crisis) as discovered in 69 percent of the sampled news stories. Othman (2007) investigated how Egyptian people relied on media during health crises, with a case study of the swine flu. He discovered a high positive

correlation between the outbreak of a novel infectious disease and people's reliance on mass media. On the other hand, Al Nagar (2010) analyzed the salience of health crises in Egyptian media during the outbreak of the swine flu and the avian flu. The study discovered news stories of both infectious diseases were the most dominant articles in the sampled newspapers compared to other news covering other events. Stories of the swine flu represented 39 percent of the articles, while news about the bird flu ranked second.

Since the outbreak of the COVID-19 pandemic, the Egyptian media —both privately owned and governmental — paid attention to COVID-19 news in China. Then, from the beginning of March, it focused mostly on European updates. By the end of the same month, and with the increasing number of infected cases, there was a domestic focus (Hamdy, 2020). The media, mainly the night TV talk-shows, were airing daily updates and reports on the latest situation and the pandemic's effect on Egyptian lives (Hamdy, 2020). The Ministry of Health was broadcasting several public awareness campaigns on both Egyptian radio and TV stations, in addition to daily press statements that were posted on social media channels (Hamdy, 2020). The Ministry of Health used various channels of communication, including TV, Facebook ads, mobile messaging and street advertisements, in order to raise awareness and educate Egyptians about the virus and preventive measures (Khairy & El-Sharaawi, 2020).

There were three messages dominating Egyptian media reporting on COVID-19: reassuring people in the lead-up to the inevitable outbreak; the state is ready to face the virus; spreading all the precautionary measures needed and how to integrate them in the citizens' daily life to protect themselves (Khairy & El-Sharaawi, 2020). Similar to the majority of countries, in Egypt there was fake content and

misinformation on the online news platforms, such as bogus medications and racism against Asians, in addition to some content inciting worry and fear (Khairy & El-Sharaawi, 2020). On a positive note, the WHO praised the country's efforts to contain the virus's spread, though international media accused the government of downplaying the real number of infected cases (Khairy & El-Sharaawi, 2020). The Egyptian government denied these claims and lawsuits were filed against foreign journalists who published these allegations (Khairy & El-Sharaawi, 2020).

The local government urged citizens to depend mainly on "credible sources" for their information, and warned that any individual who spread fake news about the pandemic may face a five-year imprisonment in jail, according to a statement issued by the public prosecution (Egypt Today, 2020). In April 2020, Egyptian President Abdel Fattah al-Sisi called on the media to maintain transparency and be objective in their news coverage of the pandemic to avoid the spread of rumors (Egypt Today, 2020). He, moreover, highlighted the medias role as part of government efforts in building the Egyptian personality and culture (Egypt Today, 2020)

Abdelhafiz and his colleagues (2020) studied the perceptions of the Egyptian public towards the coronavirus through a cross-sectional survey of 559 Egyptians adults. They discovered that most participants perceived the coronavirus as a life-threatening disease which affects the elderly and people who suffer from chronic diseases (Abdelhafiz et al.,2020). The authors believe that this perception refers to the 'effectiveness' of mass media messaging. The study, moreover, found that 16.8 percent of the sample believe that media exaggerates the risk of the infection (Abdelhafiz et al.,2020). About one-fourth of the sample believed that the pandemic is "associated with stigma" (Abdelhafiz et al.,2020, p.884).

5.3 The United Kingdom

The United Kingdom has a diverse system of strong public service broadcasting topped by the BBC, partisan mass circulation and commercial national press (Fimstone, 2018). In the press, there is a difference between tabloids and quality national press and also there is a distinction between the regimes that govern the print and broadcast media (Fimstone, 2018). The country has a large national press with almost eleven national daily newspapers and ten Sunday sister titles; seven of these titles publish special editions for Scotland which compete with three Scottish dailies (Fimstone, 2018). Based on the physical size, quantity of news, values and quality of content, the national newspapers are divided into three sectors: broadsheet (also known as quality), mid-market and tabloid. In the United Kingdom, the press industry is influential, as according to McNair (1999), around 80 percent of adult British citizens read at least one national daily newspaper on a regular basis (not necessarily every day) and 75 percent read a Sunday edition. Examples of quality press are: *The Times,* the *Guardian,* the *Daily Telegraph*, the *Independent* and the *Financial Times,* while the middle market are the *Daily Mail* and *Daily Express.* The mass market, which includes the *Daily Mirror* and the *Sun, are* published in tabloid format. A similar distinction exists on Sundays, with qualities (*Independent on Sunday, Observer Sunday Times* and *Sunday Telegraph),* middle market (*Sunday Express* and *Mail on Sunday*) and mass market (*News of the World, People Mirror*).

Similar to the print industry across the globe, the print readership and circulation of newspapers in the United Kingdom have been dropping due to changes in audience behavior and a shift to digitalized content (Fimstone, 2018). Many media organizations have digitalized their content online through websites or mobile apps

for smartphones. In the United Kingdom, the readership of online newspapers has surpassed the print circulation, as digital readership jumped by more than a third in 2019, with more than 6.6 million extra readers every day, reaching a total of 25 million readers for national news, according to PAMco (Publishers Audience Measurement Company), the governing body for audience measurement in the published media industry (Wikes, 2020).

The media coverage in the United Kingdom about the novel pandemic of the coronavirus, was very intense and was dominated by "fear mongering words" (Jorgensen, 2020). Karin Wahl-Jorgensen, the director of Research Development and Environment, School of Journalism, Cardiff University, whose has expertise in studying the role of emotions in journalism, including in the coverage of disasters and crises, analyzed 100 high-circulation English-language newspapers around the world, using the LexisNexis UK database, investigating 9,387 stories about the outbreak. She discovered 1,066 news stories that mentioned "fear" or related words, including "afraid," and "killer virus." Tabloid newspapers, such as *the Sun and the Daily Mail*, were more likely to use fear-inducing language. For example, the Sun's coronavirus live blog routinely refers to the virus as a "deadly disease" (Jorgensen, 2020, Para.6). A report published by the Reuters institute concluded that the UK public is split on whether the media has been balanced in reporting the COVID-19 crisis. The report states that perceptions of how the news media has covered the government is largely unchanged since April, as 33 percent of the public said that they feel the coverage has not been critical enough, 28 percent said the news media has covered the government response fairly and 26 percent believe that the coverage has been too critical. (Reuters Institute, 2020). Moreover, according to a recently-published data from PAMCo, in the first quarter of 2020, people's daily consumption of both digital and print news

outlets in the UK, surged to set a new record of more than 30 million readers (Wikes, 2020).

6. COVID-19 measures: Lockdown, Partial Lockdown and Herd Immunity

6.1 Lockdown and Curfew

After the WHO declared COVID-19 a global pandemic disease, countries across the globe started to work on the best possible preventive approaches to mitigate the spread of the virus. Every country has dealt with the situation differently. There were curfews (partial lockdowns), quarantines and other restrictions, such as shelter-in-place orders, lockdowns and stay-at-home orders. These restrictions have existed throughout human history for different reasons (Jahanbegloo, 2020). One major reason is the outbreak of a novel pandemic, fighting against terrorist attacks such as: 9/11 attacks in the US; Brussels, Belgium, locked down after the November 2015 Paris attacks; and a lockdown was imposed by the Indian government in August 2019 on Jammu and Kashmir to curb terrorism (Jahanbegloo, 2020; Kumar et al., 2019; BBC, 2015). Lockdown could also be imposed due to technological disasters (such as the nuclear accident on April 26, 1986, at the Chernobyl Nuclear Power Plant) (Jahanbegloo, 2020; India TV News, 2019; BBC, 2015).

The outbreak of the novel global pandemic COVID-19 put at least half of the world's population under lockdown by April 2020, with more than 3.9 billion people in at least 90 countries and territories having been asked or ordered to stay at home by their governments (Sandford, 2020). The WHO recommended governments impose short-term curfews and lockdowns in order to "reorganize, regroup, rebalance resources," protect the exhausted health-care employees and impose long-term

responses to the virus, such as maintaining personal hygiene, effective contact tracing and isolating when ill (Doyle, 2020). Moreover, all educational institutions were closed, such as schools and universities in 80 countries, affecting approximately 61.6 per cent of the world's student population (UNESCO, 2020). The WHO advised governments to exploit the extra time granted by the lockdown to build capacities to detect, isolate, test and care for all cases; trace and quarantine all contacts; engage, empower and enable populations to drive the societal response and more (WHO, 2020).

On the other hand, there were other countries that did not impose partial or full lockdown, such as Japan, South Korea and Taiwan (Yamaguchi, 2020; Campbell, 2020; Kirby, 2020). Some relied on cellphone contact tracing as they already had few cases and fatalities. In the United States and Brazil, a handful of states did not introduce any lockdown-type measures (commonly known as "stay-at-home orders") (Secon, 2020). Sweden followed a totally different approach to curb the virus. The country relied on voluntary social distancing and closed only universities and high schools while asking older people and the most vulnerable residents to avoid social contact. Meanwhile, restaurants, primary schools and kindergartens were kept open (Beswick, 2020).

There was a big debate if lockdown and stay-at-home orders were the most effective procedures to contain the virus. Epidemiologists have been split on the issue, with big supporters for lockdowns including the Imperial College London's Neil Ferguson and Cambridge's Rajiv Chowdhury, and others against lockdowns including Mainz's Sucharit Bhakdi and Sweden's state epidemiologist: Anders Tegnell (Booth, 2020; Ferguson et al., 2020; Chowdhury et al., 2020; Nolting, 2020).

Several analysts said lockdowns saved people's lives, but still they mentioned that data is not sufficient to correlate the decreasing number of infected cases to social distancing (Flaxman et al., 2020; Hsiang et al., 2020). Another study attempted to investigate the rapid spread of the pandemic based on the most common symptoms, such as loss of taste and smell in three countries: France, Italy and the UK. It concluded that there was a correlation between the drop in novel symptoms after few days under lockdown restrictions (Pierron et al,2020).

Meanwhile, some epidemiologists criticized the lockdowns claiming that the imposed restrictions in some countries were introduced with no reliable data and few empirical studies raised questions if lockdowns really saved lives, especially because in some countries the strategy did not include protection plans for the most vulnerable populations, such as the elderly. It instead caused the deaths of people stricken by poverty and unemployment (Booth, 2020; Petterson et al.,2020; Ioanndis, 2020; Giesecke, 2020)

Curfews are similar to lockdowns but will less restrictions. Curfews are authorities or military orders that demand residents or specific group of people to stay in home in certain hours (Hudson, 2009). Throughout the history curfews was imposed to ensure public safety in events such as urban riot, crisis, protests, and recently during pandemics (Hudson, 2009; McDonald, 2010; Shenker et al., 2011; Petrella, 2020; Nally, 2020).

In addition to Egypt, there are several countries which imposed curfews to mitigate the spread of the virus such as the France, Spain, India, and some states in the U.S. (Larnaud,2020; Petrella,2020; Obam & De-leon, 2020).

6.1.1 The United Kingdom

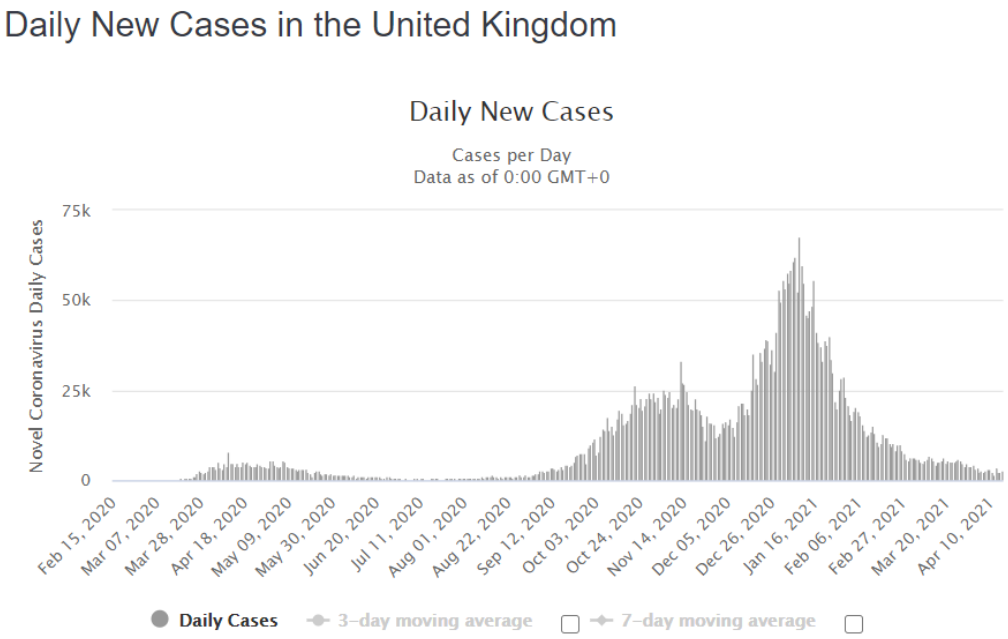


Figure 1: Daily New Cases of Coronavirus, in the UK from February15, 2020 to April 10, 2021. Source: World Meter Statistics

The virus reached the United Kingdom on January 31, 2020, after two British cases tested positive from a family that had two Chinese nationals infected in York city (BBC, 2020). Then, in February, a third case tested positive and infected 11 other people. This case was dubbed a "super spreader" (Colfer, 2020; Embury-Dennis, 2020).

In early February, the Department of Health and Social Care in the United Kingdom initiated a public health information campaign to limit the spread of the virus (Embury-Dennis, 2020). Responding to the scientists' advice, the government in early March asked those with symptoms to self-isolate for seven days. Health secretary Matt Hancock gave the health-care employees "strengthened powers" to quarantine people by force for their own health (Embury-Dennis, 2020, para.8).

At the beginning of the outbreak, unlike the majority of European countries which imposed lockdown, the United Kingdom decided to take a different approach to curb the virus. Government experts claimed that the pandemic would be contained when most of the people who got infected built up an immunity to it (herd immunity) (Burdeau, 2020). In an official speech, Prime Minister Boris Johnson announced on TV that "many more families are going to lose loved ones before their time" (Burdeau, 2020, para.3).

Johnson's statements evoked a wave of controversy and harsh criticism in the United Kingdom and across the globe (Burdeau, 2020; Minister's statement on coronavirus (COVID-19), 2020). Harsh criticism pushed the prime minister to pull back the government decision, and people were then advised to work remotely and avoid going to cafes, pubs and other places where people congregate, explaining that "the country is now approaching the fast growth part of the upward curve" (Burdeau, 2020; (Prime Minister's statement on coronavirus (COVID-19), 2020, para.4).

On March 19, 2020, a coronavirus act was given Royal Assent after it was passed by the Parliament (Hope and Rayner, 2020). This act had not been issued since World War II (Summerell et al., 2020). It gave the British government powers of emergency to curb the spread of the COVID-19 pandemic by gathering suspension, detain people suspected to be infected by the virus and to either relax or intervene the regulations in some sectors to limit the spread of the virus, help healthcare employees, assist the public health sector and the sectors that have been hit economically (Summerell et al., 2020). In April, the British government officially issued a stay-at-home national campaign called "Stay Home, Protect the NHS, Save Lives," urging people to stay at home especially during the long Easter weekend where British people used to gather with friends and family members (Coronavirus: Government

launches campaign urging people to stay at home this Easter, 2020). By the End of April, Johnson announced that the country successfully "flattened the curve" and passed the peak, and gradually the daily cases decreased in May, June and July (World Meter, 2020).

6.1.2 Egypt

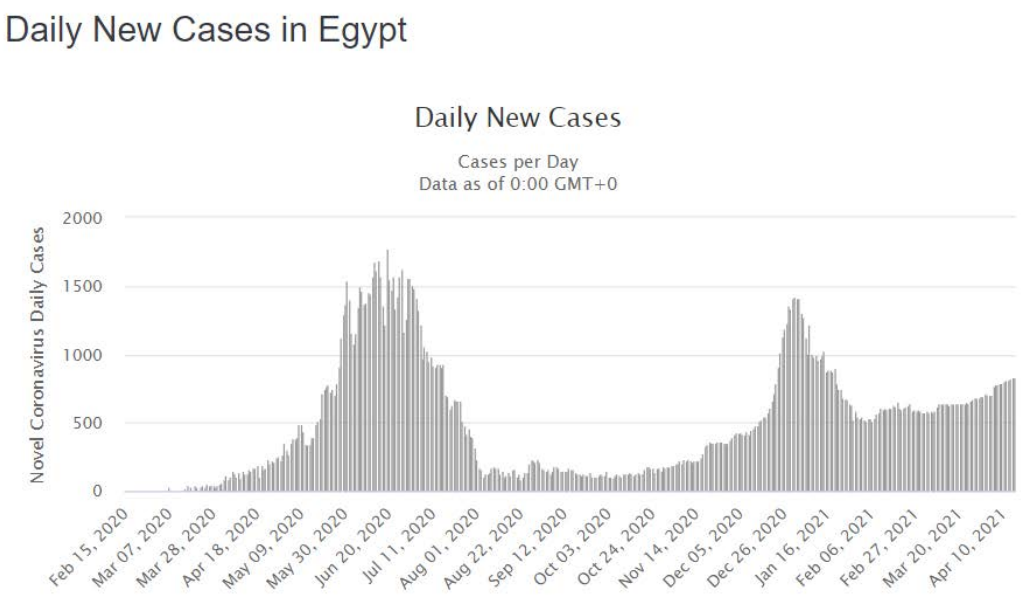


Figure 2: Daily New Cases of Coronavirus in Egypt from February15, 2020 to April 10, 2021. Source: World Meter Statistics

Egypt declared the first COVID-19 case (non-Egyptian) in February 2020. In early March, numerous foreign cases were reported and were associated with travel to Egypt, including two cases from France, two from Tunisia, two from the United States, one from Taiwan and one from Canada (AFP, 2020; Balkis, 2020; Jones, 2020; Local, 2020). As part of the country's efforts to limit the spread of the virus and contain it, Prime Minister Moustafa Madbouly announced on March 14 a suspension of schools and universities after numerous students were infected (Lotfi, 2020). Then, on March 24, the Egyptian government imposed a curfew (partial lockdown) for two weeks from 7 p.m. to 6 a.m., suspending all mass private and public transportations

during the curfew hours, closing restaurants, coffee shops, worship places and malls (Ahram online, 2020). The curfew continued until it was lifted on June 27, with opening of cafes, restaurants and worship places (Murad &Lewis, 2020).

6.2 Herd immunity

In the science of immunology, herd immunity was first introduced in 1923 by Topley and Wilson in their publication The spread of bacterial infection, the problem of herd immunity Topley and Wilson (1923) defined herd immunity as the resistance of the spread of infectious disease in population. Herd immunity exists when the bigger part of the population acquires immunity against the virus, which subsequently reduces the possibility of infection transmission within the population (R-Smith, 2019). As a result, the spread of contagious diseases becomes difficult, providing more protection for the most vulnerable people (Xia et al., 2020). In conclusion, herd immunity is the indirect immunity gained by those who have no immunity after the bigger part of the population has been infected, which is defined by Orlowski and Goldsmith (2020, p.1) as the "bulwark against further population infection surges."

Herd immunity, as a strategy to curb COVID-19, was condemned by the WHO for being "scientifically problematic and unethical" (WHO, 2020, para.7). The WHO explained that this strategy helps in the spread of COVID-19 through populations "of any age or health status which cause unnecessary suffering and death" (WHO, 2020, para.7). The WHO elaborated that most populations across the globe are susceptible to the pandemic and the virus's immunity is not comprehended yet (WHO,2020). Despite the fact that most people who were infected by the virus developed an immunity within the first weeks, the strength and duration of this

immunity is not understood yet, as there are many people who were infected by the virus twice (WHO,2020).

6.2.1 Sweden

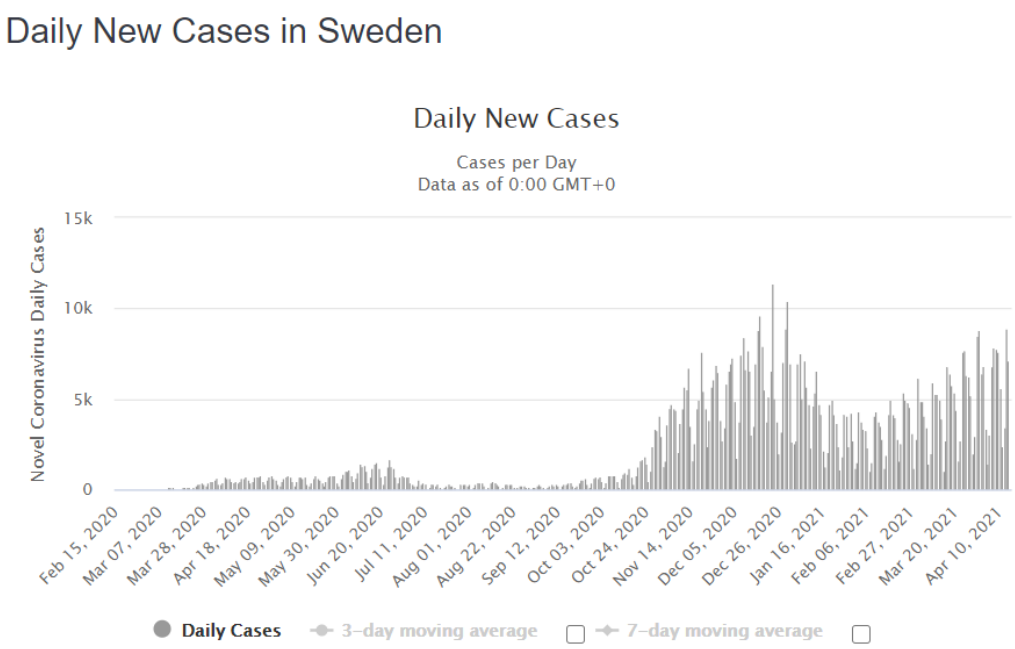


Figure 3: Daily New Cases in Sweden from February15, 2020 to April 10, 2021. Source: World Meter Statistics

On February 1, 2020, the Swedish government considered COVID-19 a dangerous virus, presenting a set of measures meant to limit the spread of the virus, mitigate its bad economic effect, flatten the curve and avoid large infection rates at the same time (Government offices of Sweden, 2020). The government's strategy included five main pillars: limiting the spread, ensuring the availability of health care resources, minimizing the effect on critical services, mitigating the effect on the public and impacted companies; providing all the needed information to the people; ensuring that the correct action is taken at the correct time (Government offices of Sweden, 2020). Unlike most of the European countries, Sweden relied on a different

approach which included cooperation between the country's response and the public's responsibility by maintaining social distancing, working from home if possible, avoiding mass gatherings and limiting public transportation usage (Savage, 2020). Though Sweden never said frankly that reaching herd immunity is their aim, but that was concluded from their strategy to open the society to develop public's resistance to COVID-19 (Savage, 2020).

Sweden banned gatherings of more than 50 individuals, restricted visits on care houses, implemented table-only service in restaurants and bars, and kept schools open. The government has described the virus several times as “a marathon not a sprint” to spread the message that the government is working on a long-term strategy. (Savage, 2020).

According to Orlowski and Goldsmith (2020) this “very Swedish strategy” is attempting to integrate the sociocultural concept of “folkvett” which translates to people’s wit (Löfgren, 2020, Para.9). The Swedish strategy provoked a wave of controversy among the globe; some Swedish scientists have condemned the government for trying a “dangerous experiment” with the citizens and called on the authorities to follow other European countries (Ahlander, 2020).

By the end of July, roughly more than 5,500 people died from the coronavirus in Sweden, a country with more than 10 million people, which is one of the highest rates of fatalities compared to Europe’s population, and the worst among the Scandinavians (Savage, 2020). Data compares fatalities per capita in Sweden to 16 other countries. The data proposes that Sweden might “pay the price” as it has a larger number of deaths per capita compared to other countries.

According to experts, there were two explanations for this high number. One explanation for this high rate of mortality is that half of the deaths were in the care houses, as the elderly are more vulnerable (Secon & Su, 2020). Another explanation for the high death rate was the limited number of tests Sweden conducted. By the end of May, there were 32,800 positive cases out 209,900 tests which represents 15.9 percent, which is not sufficient to know their threshold. According to the WHO, any country needs less than 10 percent of the tests to be positive to have a more balanced idea about the correct rates (Secon & Su, 2020).

Chapter Three:

Theoretical framework

1. Framing theory

Individuals use media coverage as a cognitive shortcut, or heuristic, to make sense of complex risks, including infectious disease pandemics (Ungar, 1998). The public "co-constructs" what they see, read and hear from the media with information from personal experience to understand an issue (Dearing & Rogers, 1996). Thus, studying how the media interprets specific issues is a prerequisite to understanding the dynamics surrounding public perception (Shih, Wijaya, & Brossard, 2008; Ungar, 1998). Over the years, researchers have been investigating intensively the concept of framing of mass media messages. The result is a significant theoretical cornerstone in research into communication since its introduction to social sciences in 1947 by Bateson and Goffman (liu, 2012).

The framing theory has several definitions (e.g., Entman, 1993; Gamson & Modigliani, 1989; Scheufele, 1999). The most cited definition is by Entman conceptualizing that "to frame is to select some aspects of a perceived reality and make them more salient in a communicating text" (p. 20). Gitlin (1980) defined frames as "the principles of selection, emphasis and presentation composed of little tacit theories about what exists, what happens and what matters" (p.6). Moreover, Capella and Jamieson (1997) stated that salience and selection propose that framing is to draw attention to specific features and attributes of a subject and drawing less attention to other issues.

Media framing, according to Scheufele (2000), influences people's perception about an issue, proposing that the way the message was framed shapes the action that will be taken by the audience. Vinswanath and colleagues (2014) gave another definition to framing theory, stating that it's an organized public discourse about a topic which leads to the selection of some attributes. According to Ungar (1998), the media frame draws attention to "an interpretive package" that includes metaphors, stories, visual images, symbolic devices and moral appeals. The framing theory suggests the way in which the media talk about a certain issue affects how audiences feel about that issue (Ungar, 1998; Shih, Wijaya, & Brossard, 2008)

Entman (1993) describes framing as the communication's power to influence an audience's perception about an issue or a topic. He described how framing works and how to be applied on content analysis to offer scholars a more comprehensive "universal theoretical understanding" (Entman, 1993, p.51). He stated that we can find frames in all parts of the process of communication, from news production, to disseminated content to receivers (Entman, 1993, p.51). Entman states that the framing process occurs in two steps, which are the selection and salience, so to frame is to make a specific piece of information more prominent in the content. He then divided the framing process into four groups, including "the communicator, the text, the receiver and the culture," and then he defined culture as the "stock of commonly invoked frames exhibited in the discourse and thinking of most people in a social grouping" (Entman, 1993, p. 52).

Scheufele and Tewskbury (2007) stated that framing has a multilevel impact. They suggested that there are two different levels of influence for framing: macro and micro. The macro level is how the media highlights specific topics and makes it

prominent, while micro-level framing impacts the audience's perception about this topic (Scheufele and Tewskbury ,2007).

Burton (2010), Scheufele & Tewksbury (2007) stated that news framing has two types, which are reader framing and journalistic framing. Journalistic framing refers to the features and characteristics used by the media outlet to convince the public of the intended messages, while the process of message interpretation is the reader framing (Burton, 2010; Scheufele & Tewksbury, 2007; Philo, Miller & Happer, 2014). Journalistic framing also refers to highlighting specific attributes of the topic and ignoring others (Shih, Wijaya, & Brossard, 2008).

Past studies analyzed news frames and their presence in media coverage, highlighting the role of several factors such as structural, social, organizational, ideological and individual. These variables can influence the process of frames creation or even modification (Scheufele, 1999, p. 107) According to McQuail (1983), media frames are constructed by journalists and other professionals working in media organizations under daily routine pressure. Reese (2001, p.1) stated that news framing is "the way events and issues are organized and made sense of, especially by media, media professionals and their audiences."

The analysis of news frames during crisis is crucial, as the public perception is dependent on the information they receive and the salient content in the news coverage (Heider, 1958). The framing theory does not only propose media salience for a topic; it includes what this topic shall include and what it shall ignore (Iyengar & Kinder, 1987; Pan & Kosicki, 1993), thus mass media shapes public interpretations of that topic by limiting the content that is disseminated (Hallahan, 1999).

Entman (1993) disclosed four functions for framing: defining the problem, diagnosing causes, making moral judgments and suggesting remedies. These four functions could be maintained through one sentence or a whole text. The framing functions, according to Entman (1993), are crucial as public behaviors change over time, not after one single story. The more constant the usage of frames is, the higher impact it will have on public opinion and changing perceptions.

Researchers agree on the strong influence of framing on people's reactions to big issues and events, as it can change the public opinion and the public policy. For example, Muhamad and Yang (2017) found that attribution of responsibility frames could impact the audience decision and ability to contribute in problem solving. They, moreover, agreed with Gamson (1992) that a frame can have an influential social power, thus framing acts as a theoretical lens for understanding news coverage, especially in the case of pandemics (Lee, 2014).

Scholars suggest that people use media as a "cognitive shortcut or heuristics forms" to understand complicated topics, such as pandemics or infectious diseases due to the lack of people's experience with these diseases, so they tend to believe what media tells them (Shih, Wijaya, R., & Brossard, D., 2008).Lee (2014) shed light on the relationship between cognitive psychology and framing, saying that an idea is stored in the individual's memory as a node and connected to other nodes by a semantic path which is called the "associative network model of human memory" on which framing is highly dependent. The article discovered that media frames in the news coverage of the swine flu acted as interpretive schemes that activated stored ideas that resulted in predictable reactions (Lee, 2014).

In this study, the theoretical framework of the framing theory was used to understand how the news media reported the COVID-19 pandemic in three countries that have different structural, social, organizational, economical, ideological and individual levels. These differences, according to Scheufele (1999), impact the frames representation, which accordingly affects the audience's perception about that issue (Ungar, 1998; Shih, Wijaya, & Brossard, 2008). Thus, analyzing news coverage of disease crises offers a window for understanding public opinion and knowledge.

2. Social representations theory (SRT)

The social representation theory was founded by Serge Moscovici in 1961 during his study on the reception and circulation of psychoanalysis in France. The theory states that when society faces a new phenomenon or an event, shared ideas and constellations emerge in the public sphere (Doise, 1986; Joffe, 2003; Moscovici, 1961), which is a collective coping mechanism that helps people by imposing order on a seemingly chaotic and unpredictable novelty (Washer, 2004; Joffe & Haarhoff, 2002).

According to Moscovici (2001), social representation constructs the world through events, images, terms, descriptions, models, metaphors and examples to anchor a new phenomenon and make it look familiar and less threatening. The theory has influenced scholars in various disciplines, though it's not quite popular among media researchers (Höijer, 2013). Though several media and communications scholars used the theory's framework in studying media coverage and the emergence of novel pandemics and infectious diseases (Washer, 2004; Mayor et al, 2012; Gilles et al, 2013), according to Wagner et al. (2002) the media are a main source of

these social representations. Novel scientific events gradually enter the public arena through interpersonal communication and mass media, in which the replication of emerging social representations take place and develop into stable forms in the consciousness (Moscovici and Hewstone, 1983; Bauer and Gaskell, 1999; Jovchelovitch, 1996).

Social representation occurs on two processes, which are anchoring and objectification. The latter refers to the simplifying and re-contextualization of new information when public discussion of a topic starts. The anchoring process refers to making unfamiliar topics familiar by integrating and fitting uncommon and new issues into pre-existing information and previous objects Moscovici, 1961). These two processes help people deal with novel and uncommon events (Wagner et al., 2002).

Emerging infectious diseases (EID) and pandemics are labels given to several pre-existing or re-emerging epidemics such as HIV/AIDS, SARS, the West Nile virus, Ebola, the avian flu and the swine flu (Morens et al., 2004). These labels are popular in media, TV and books, so according to Washer (2010) they became common. The novelty of EIDs and their threatening features make them perfect vehicles to investigate the way social representations evolve and emerge (Mayor et al, 2012).

Several studies found that the news media and laypersons used to connect EIDs to far-flung collectives (Mayor et al, 2012). For example, Ungar's (1998) study found that the media coverage of Ebola changed from "mutation-contagion," which included fear and information induction to "containment" with more reassuring information and "othering" frames to give the feeling that the threat is linked to far off areas (Ungar, 1998).

Scholars found that there are three characters in the social representation of people: victims (attribution of victimhood), heroes (attribution of responsibility) and villains (attribution of blame) (Wagner et al, 2011). According to Washer (2004), social representation resonates with the media representations of pandemics throughout history. “We lay the blame for the new threat on those outside one’s own community, the ‘other’” (Washer, 2014, p. 2562). For example, a study investigating the outbreak of the swine flu in 2009 found that laypersons and media used frames of blame (villians) on Mexicans, depicting them by poor collectives and the African people by the disease victims and health-care people as heroes (McCuley et al., 2013).

Another study investigating media frames of the 2014 Ebola outbreak by Monson (2017) found “othering” was a dominant frame in the media coverage of Ebola.

This study will draw on the framework of the social representation theory to measure media representations of the “othering” (blame) frame in the coverage of the COVID-19 pandemic in three different countries. It will investigate whether the media framed the pandemic as “the others pandemic” and whether the threat is linked to far-off areas.

Chapter Four:

Research questions and hypothesis

Based on framing and social representation theoretical frameworks and after reviewing the literature of news frames analysis during public health crises, two hypotheses and seven exploratory research questions are proposed to analyze the most frequent frames in the news coverage across Egypt, the United Kingdom and Sweden during the first wave of the virus (across the three countries) and the tone of the stories: Pessimistic/ Optimistic/ Neutral.

The researcher examines the dominant media frames in the analyzed news stories of COVID-19 coverage and investigates other variables, including the newspaper, the time and the tone of the story.

RQ1: What were the most frequent frames present in the coverage of COVID-19 in the three countries: Sweden, United Kingdom and Egypt?

RQ2: What were the most frequent frames present in the coverage of COVID-19 (first wave) in Sweden?

RQ3: What was the tone of media coverage of COVID-19 during the first wave in Sweden?

RQ4: What were the most frequent frames present in the coverage of COVID-19 (first wave) in the Egyptian media?

RQ5: What was the tone of media coverage of COVID-19 during the first wave in Egypt?

RQ6: What were most frequent frames present in the coverage of COVID-19 (first wave) in the British media?

RQ7: What was the tone of media coverage of COVID-19 during the first wave in the UK?

H1: There are statistically significant differences in tone in the news coverage across the three countries

H2: There is a statistically significant difference in the a) attribution of responsibility frame; b) the economic consequences frame; c) the morality frame; d) the blame frame; e) the fear frame; f) the human interest frame; and g) the conflict frame scores in the news coverage among Sweden, United Kingdom and Egypt.

RQ1 gives an overview of the data and the sample as a whole**. RQ2, RQ4 and RQ6** examine the most dominant frames in each country by itself, to highlight each media system independently and how each country's news values, structural and organizational levels affected the news coverage on COVID-19. While **RQ3, RQ5 and RQ7** examined how each country toned its news coverage; did the majority of news articles included have negative content (pessimistic), such as news about deaths, the virus's danger, negative impacts on people, etc., or positive content (optimistic), such as an increase in recovery rates, decline in new cases, initiatives and efforts to contain the virus, news about vaccine, etc. Or was the coverage neutral, which includes both types of content. Finally, **H1** and **H2** explore the differences among the three countries and attempt to weave all the study findings into a coherent whole from a comparative approach, where similarities and differences in frames and tone are identified.

Chapter Five:

Methodology

This comparative study employs a content analysis to analyze the dominant frames used in the media coverage during the first wave of the COVID-19 pandemic across three countries: Egypt, Sweden and the UK. In the study, online news websites in the three countries were analyzed. It's hard to claim that these three countries are representative of the world at large, though they represent various media systems and cultures in various geographic regions around the world with completely different news values. Moreover, each country has adopted a different strategy to contain the spread of the COVID-19 pandemic.

1. Sampling

In order to analyze the media frames in online news across the three countries, two online news outlets have been selected from each country, amounting to a total of six. From Egypt, the online versions of *Youm 7* (the seventh day) (https://www.youm7.com/) and *Al-Ahram*(http://gate.ahram.org.eg/) were selected. Both websites are published in Arabic. *Youm7* is an independent privately-owned newspaper, which according to Alexa (2020) is the most visited online newspaper in Egypt and with at least 1 million unique readers per day (Webchart, 2020). Statista (2015) reported that *Youm 7* is the second-best news website in the MENA region after *Al Jazeera*. The *Youm 7 official Facebook page* had 18.9 million followers in March 2021. Allam (n.d) identified *Youm 7* as one of the most popular news outlets in Egypt in 2017. The second newspaper from Egypt is the online website of *Al-Ahram*, which is a government- owned newspaper and the second oldest media outlet in Egypt

after *al-Waqa'i`al-Masriya*, and the first media entity in the Arab Region that developed digital content (in 1997) (Media Landscape, n.d).

From Sweden, the study analyzed the online versions of two national newspapers, *Dagens Nyheter* (https://www.dn.se/) and *Aftonbladet* (the Evening Post) (https://www.aftonbladet.se/) The study analyzed a tabloid and a regular newspaper to allow a more representative sample for online news outlets in Sweden. *Dagens Nyheter* is the most prestigious and one of the leading newspapers in the country (Lundell & Ekström, 2008; Sandberg, 2007). On the other hand, *Aftonbladet*, is a daily tabloid, one of the largest newspapers in Sweden and a very popular media outlet among all Scandinavian countries (Wadbring & Ohlsson, n.d.; Sandberg, 2007). In February 2020, Alexa reported that *Aftonbladet* was the most visited online news outlet in Sweden. Both Dagens *Nyheter* and *Aftonbladet* were previously selected in several content analysis studies conducted on Swedish newspapers (e.g., Lundell & Ekström, 2008; Sandberg, 2007; Karlsson & Strömbäck, 2010; Karlsson, 2012; Reuter, 2013; Bengs et al., 2008).

From the United Kingdom, the study analyzed *The Guardian* (https://www.theguardian.com), which is the news outlet people trust most for digital-content news, with 84 percent of readers saying that they trust what they read in it, according to a study released by IPSOS MORI, a market research company based in London. (Bold, 2018, para.2). The second newspaper is *The Daily Mail* (www. Dailymail.co.uk), which is the UK's highest-circulated daily newspaper, according to the UK's Audit Bureau of Circulations (ABC) figures published in June 2020 (Sweney, 2020), and the third best news website in the United Kingdom following *BBC* and *The Guardian* (Alexa, 2020).

For the sake of the current analysis, the study selected three systematic composites weeks (21 days) randomly chosen to cover a period from January 31, 2020 to July 9, 2020. A composite week assures equal representation of each day of the week, as certain days of the week tend to correspond to certain categories of news and that sample is representative of the study period (Len-Ríos et al., 2005; Rodgers et al., 2007; Riffe et al., 2014; Kim et al., 2018). The sample started on January 31, when both Sweden and the UK together reported their first positive case of coronavirus and the WHO announced COVID-19 as a global threat (CNN, 2020); BBC, 2020; Aftonbladet, 2020). Given the fact that the peak of each country was different, the study used World Meter indices — the Live world statistics platform — of COVID-19 daily cases in the three countries to determine the common day in which all three countries had a decline in new cases. July 9 was the intersection date that witnessed a significant decrease in all three countries. Egypt announced that it was below 1,000 new cases, Sweden announced the daily tally of new COVID-19 cases fell to its lowest since its peak and in the UK, the Office for National Statistics announced that cases in England were falling on the same day (Al Masry Al Youm, 2020; Reuters 2020; BBC, 2020). Accordingly, and for the purpose of this study, this time period is referred to as the first wave in the three countries. A disease wave is defined as an increase in the number of infected people, followed by a peak and ending by a decline. (The Conversation, 2020).

Moreover, based on the three successive stages that have been previously adopted by several scholars in multiple media framing studies (Holland and Blood, 2010; Nerlich and Halliday, 2007; Ungar, 1998, 2008; Wallis and Nerlich, 2005; Washer, 2004; offe & Haarhoff, 2002;Vasterman and Ruigrok, 2013), the current study has selected the starting or ending date of the three constructed weeks

based on these consecutive stages. According to the scholars the three stages of media coverage of any novel infectious disease are: Sounding the Alarm, Mixed Messages and Hot crisis, and Containment (Holland and Blood, 2010; Nerlich and Halliday, 2007; Ungar, 1998, 2008; Wallis and Nerlich, 2005; Washer, 2004; offe & Haarhoff, 2002;Vasterman and Ruigrok, 2013).

The first stage of an outbreak includes fearful claims that usually spread in the news media to confirm the potential of a novel infectious disease in which media can use metaphors to describe emerging infectious diseases to the uneducated audience, such as killers, plagues or hostile combatants in war (Wallis & Nerlich, 2005).

The second stage of a pandemic, according to scholars, is characterized by a combination of both panic and reassuring media messages. For example, according to Vasterman and Ruigrok (2013), during the second stage of the swine flu coverage, the media focused on all the preparations made for the public health and possible crisis scenarios. The governments and public health sources communicated with the public to calm their panic, though several messages in the media indicated that everything was under control.

The third stage of a pandemic takes place when it becomes a “fact,” which is often accompanied with a “crisis and containment” discourse, with various messages of virus containment and how it’s being handled (Wallis & Nerlich, 2005; Vasterman and Ruigrok, 2013).

The first composite week is from January 31 to March 19. This week was the outbreak stage, as the three countries were hit by the virus during these weeks (BBC, 2020; Aftonbladet, 2020; AFP, 2020). The second week went from March 24 to May 11; During this period the three countries have issued their preventive decisions

(lockdown and curfew in UK and Egypt; minimal restrictions in Sweden) (Murad & Lewis, 2020; BBC, 2020; Löfgren, 2020). The third composite week extended from May 22 to July 9, 2020. This period is the containment stage as the curve of the virus spread (first wave) was flattened in the three countries (Al Masry Al Youm, 2020; Reuters 2020; BBC, 2020).

For the sake of the current analysis, all articles of the six news outlets were accessed through Google News using keywords: Corona, COVID-19, coronavirus and 'coronaviruset' in Swedish newspapers. According to Hester & Dougall (2007), Google News has established a base in the news aggregation market. Several studies have used Google News, or other news aggregators, to collect a sample (e.g., Hester & Dougall, 2007; Friedman & Merel, 2013). In one of the studies, the author defined Google News as one of the most important tools to access online content and a precious content aggregator for online news (Neuendorf, 2016). She described Google News as "a technology that harnesses the power of interactive media for automated, and often automatic, content retrieval or collection" (Neuendorf, 2016, p.224).

The study selected five articles randomly for each sampled day using a Random sampling online software (www.stattrek.com) (N=585), a sampling method that has been previously used by Cui and Liu (2017). Some newspapers published less than or equal to five articles (about the coronavirus) in some of the sampled days, especially at the beginning of the outbreak, so the whole number of articles were selected. Based on literature, scholars had different opinions about the most adequate number of online news articles that should be selected for a single study period, but some scholars have had a similar sample size (e.g., D'Heer et al., 2019; Cui & Liu, 2017).

2. Framing measures and coding

By reviewing the literature of news frames during health crises, the researcher found Neuman et al. (1992) presented four types of news frames that are commonly used in the framing of news stories. They are: human impact (interest), economic consequences, morality and conflict. Then in 1999, Valkenburg and Semetko deconstructed the frames further by adding the frames of responsibility.

The current study adopted the five frames from Neuman et al. (1992), and Semetko Valkenburg (2000), along with two other frames borrowed from Emily Ellis (2018), which are the fear and blame frames. The study has used a deductive approach to content analysis, which verifies the existence of predefined frames in the news. An inductive approach analyzes news content and searches for as many frames as possible. These seven frames were: the attribution of responsibility frame; the economic consequences frame; the morality frame; the blame frame; the fear frame; the human interest frame; and the conflict frame.

A series of 28 questions were developed, as each frame has between three to five questions and the coder has to answer either with yes (1) or no (0). Each question was meant to measure one of these frames. The frames are attribution of responsibility, human interest, conflict, economic consequences, morality, blame(othering) and fear. Examples of the questions: a) Does the story suggest that some level of government has the ability to ease the problem? (attribution of responsibility); Does the story emphasize how individuals and groups are affected by the issue/problem? (human interest); Does the story refer to two/more opposite sides of the problem/issue? (conflict); Does the story offer specific social prescriptions about how to behave? (morality); Is there a reference to economic consequences of pursuing a course of action? (economic consequences); Does the article blame other countries for being the

reason for the virus outbreak? (blame); Does the overall tone of the story established in the lead convey urgency or fear? (fear) (See Appendix)

Moreover, the study analyzed the tone of the story, which is classified into three categories: optimistic, pessimistic and neutral. This was adopted from previous studies by Mutua & oloo (2020) and Machungo (2012) in which an optimistic news story was defined as an article that included only hopeful and reassuring messages, while pessimistic news articles are those with skeptical content about the virus and news that incites negative emotions.

And finally, if the news story has both optimistic and pessimistic content equally, or if it lacks any risk judgment, then it will be coded as neutral. The tones were numerically coded as 1-3 (See Appendix).

The researcher and an independent coder completed the coding, with each coding 50 percent of the sampled news articles (n=585). The news stories from Egypt and the UK news stories were immediately coded, but given the fact that neither the researcher nor the coder know Swedish, news stories from the Swedish media were translated into English using Google Translate, the automated translation software. Many scholars have used Google Translate in data analysis (e.g., Srabstein, 2013). In addition, Google Translate has been hailed by Vries and his colleagues (2018) as a beneficial tool. The coder received extensive training by the researcher to ensure consistent coding. In order to determine the reliability of the codebook, 59 articles (10 percent of the sample); The interceder's reliability was 80 percent, based on Holsti's formula. Reliability estimates for each frame were calculated by Scott's pi as follows: Tone of the story 0.74; attribution of responsibility 0.79; human interest 0.73; conflict 0.84; economic consequences 0.74; morality 0.79; blame 0.81; fear 0.80.

Chapter Six

Results

For the purpose of this analysis, a total of 585 news articles were selected from the three countries: Egypt, the United Kingdom, and Sweden. The following findings will determine the most dominant frames in each country and highlight whether they varied throughout the time of the analysis. The results determine the tone of the story in the coverage of COVID-19 in each country during the first wave. The study, finally, analyzes if there are any common frames between the three countries.

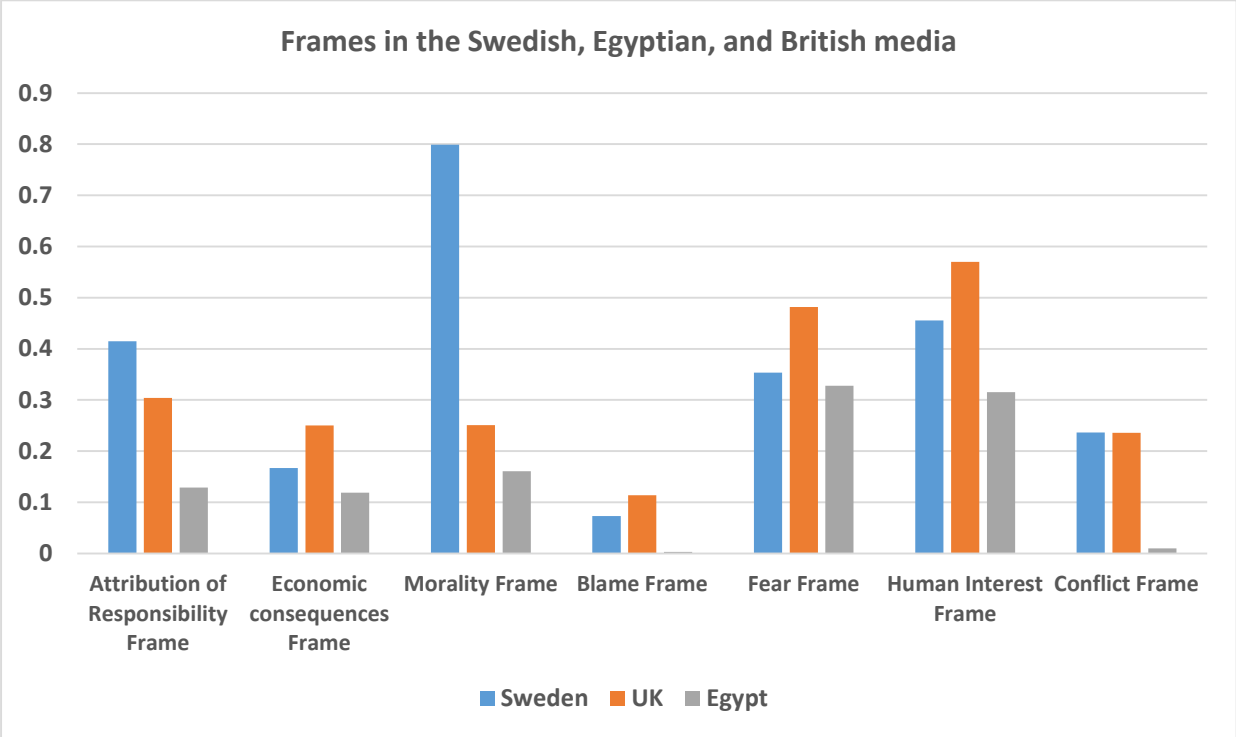
The study used a descriptive analysis to determine the dominant frames in the coverage of COVID-19 in each country by the mean frame score. It, moreover, used one-way ANOVA to measure if there is a statistically significant difference between the mean frame score of the three countries. The researcher moreover used Chi-squared test to measure if there is a statistically significant difference between the tones of the news stories across the three countries.

RQ1 inquired about the major frames presented in the news websites in all three countries (Sweden, the United Kingdom, and Egypt). The following table determined the mean score of each frame in the coverage of COVID-19 in the three countries: the morality frame was the highest mean frame score at 0.80, followed by the human interest frame at 0. 57, while the blame frame was hardly present.

Table 1: Mean scores of Frames present in the coverage of COVID-19 (first wave) in the Swedish, Egyptian, and British media

Frame	Sweden	UK	Egypt
Attribution of Responsibility Frame	0.41	0.30	0.13
Economic Consequences Frame	0.17	0.25	0.12
Morality Frame	0.80	0.25	0.16
Blame Frame	0.07	0.114	0.00
Fear Frame	0.35	0.48	0.33
Human Interest Frame	0.46	0.57	0.32
Conflict Frame	0.24	0.24	0.01

Graph 1: Frames present in the coverage of COVID-19 (first wave) in the Swedish, Egyptian, and British media

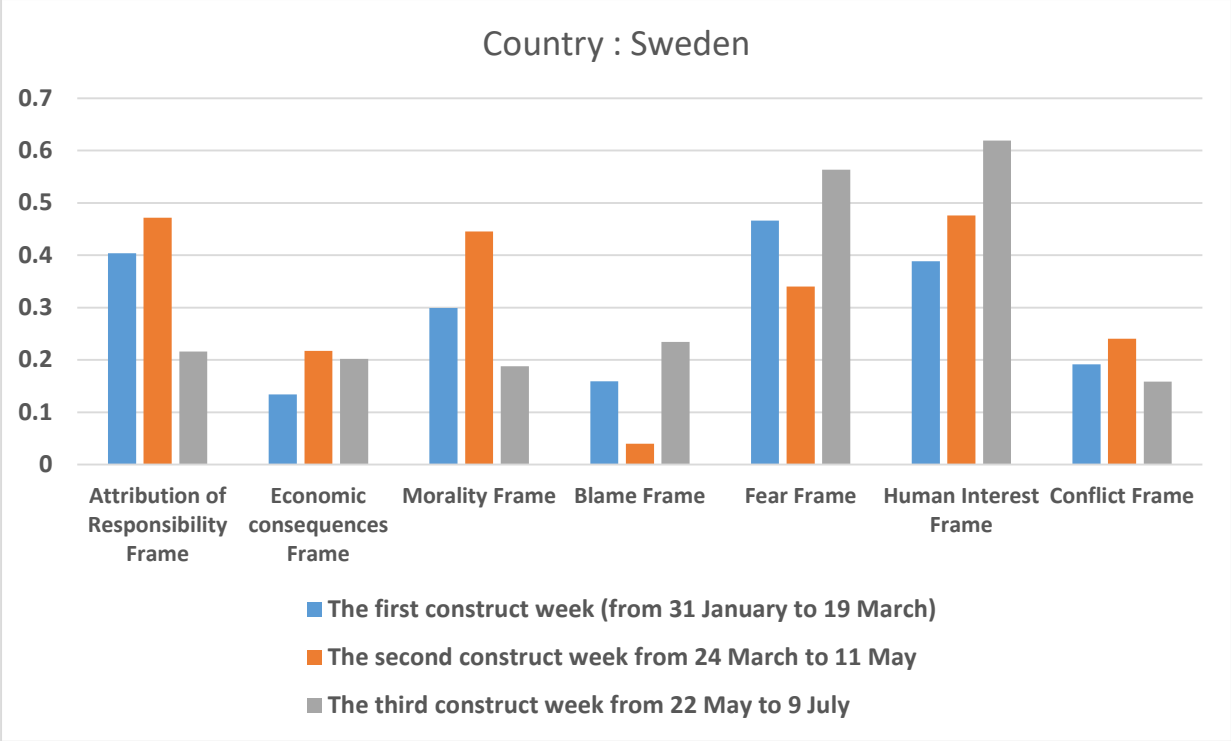


R2, R4 and R6 inquired about the frequency of the frames in each country, independently. Table 1 and Graph 1 show the mean for each frame score in the three countries. In Sweden, the data showed that the morality frame was the most dominant in the Swedish media coverage of COVID-19 by a mean frame score of 0.80. In Egypt, the fear frame was the most frequent frame presented in the Egyptian newspapers with a mean frame score of 0.33. Meanwhile, the human interest frame was the most prevailing frame in the British newspapers with a mean frame score of 0.57.

Table 2: Mean scores of Frames present in the coverage of COVID-19 (first wave) in the Swedish media throughout the three periods of analysis

Frame	The first constructed week (from January 31 to March 19)	The second constructed week from March 24 to May 11	The third constructed week from May 22 to July 9
Attribution of Responsibility Frame	0.41	0.47	0.21
Economic Consequences Frame	0.13	0.22	0.20
Morality Frame	0.30	0.45	0.19
Blame Frame	0.16	0.04	0.23
Fear Frame	0.47	0.34	0.56
Human Interest Frame	0.39	0.48	0.62
Conflict Frame	0.19	0.24	0.16

Graph 2: Mean scores of Frames present in the coverage of COVID-19 (first wave) in the Swedish media throughout the three periods of analysis



R2 inquired about the most frequent frame in Sweden. According to Table 1, the coverage of COVID-19 (first wave) in the Swedish media was dominated by morality (0.80), human interest (0.46) and attribution of responsibility frames (0.42). The blame frame was the least present frame used in the Swedish media (0.07).

The sample was collected over three constructed weeks, the first week was from January 31 to March 19, the second week was from March 24 to May 11 and the third week was from May 22 to July 9. The analyzed data found that the frequency with which the frames were used varied throughout the time of the analysis. Table 2 shows that fear frame was the most dominant frame in the first constructed week, while the human interest frame was the most frequent in both the second and third constructed weeks.

Table 3: Mean scores of Frames present in the coverage of COVID-19 (first wave) in the UK media throughout the three periods of analysis

Frame	From 31 January to 19 March	from 24 March to 11 May	from 22 May to 9 July
Attribution of Responsibility Frame	0.22	0.35	0.34
Economic Consequences Frame	0.20	0.24	0.30
Morality Frame	0.9	0.26	0.29
Blame Frame	0.23	0.07	0.05
Fear Frame	0.56	0.48	0.40
Human Interest Frame	0.62	0.59	0.51
Conflict Frame	0.16	0.27	0.27

Graph 3: Frames present in the coverage of COVID-19 (first wave) in the UK media throughout the three periods of analysis

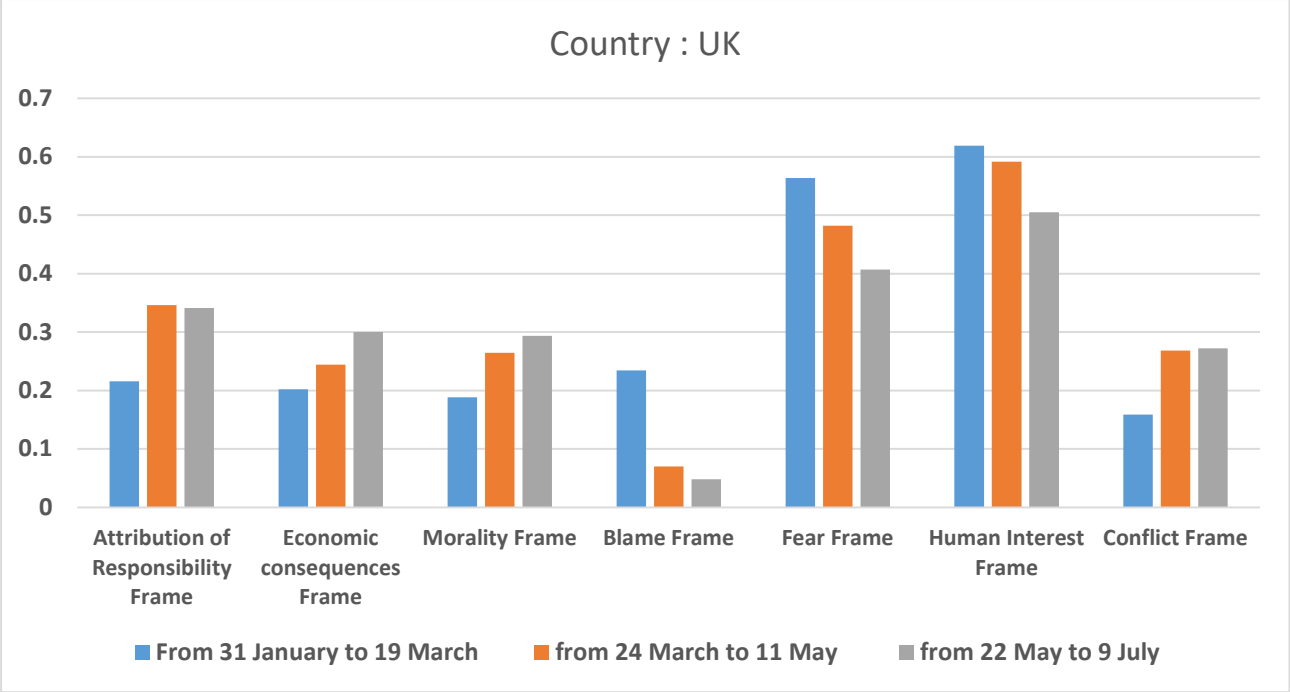


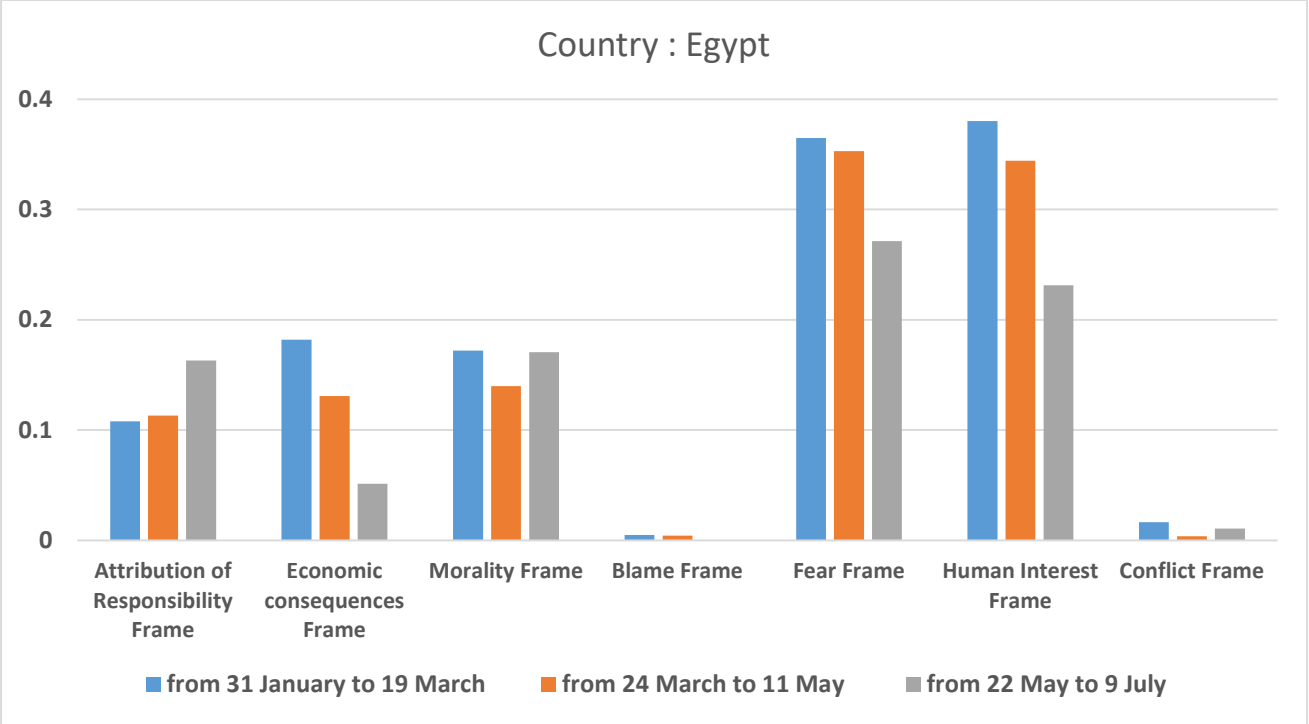
Table 4: Mean scores of Frames present in the coverage of COVID-19 (first wave) in the Egyptian media throughout the three periods of analysis

Frame	from 31 January to 19 March	from 24 March to 11 May	from 22 May to 9 July
Attribution of Responsibility Frame	0.11	0.11	0.16
Economic Consequences Frame	0.18	0.13	0.05
Morality Frame	0.17	0.14	0.17
Blame Frame	0.00	0.00	0.00
Fear Frame	0.36	0.35	0.27
Human Interest Frame	0.38	0.34	0.23

Conflict Frame	0.016	0.003	0.01

R4 inquired about the dominant frame in the British media. Human interest was the most dominant frame in the media coverage of the British media by a mean score of 0.4758; the fear frame was 0.4815 and the attribution of responsibility frame was 0.304. According to Table 3, the data analysis monitored the frames present in the coverage of COVID-19 (first wave) and found that the human interest frame was dominant throughout the time of analysis, as the mean score for that frame was the highest in the three weeks. As a result, the dominance of the frames hasn't varied throughout the time of analysis in the United Kingdom.

Graph 4: Frames present in the coverage of COVID-19 (first wave) in the Egyptian media throughout the three periods of analysis



R6 inquired about the most dominant frames in the Egyptian media coverage. The data discovered that the fear frame was the most dominant with a mean score of 0.3279, followed by the human interest frame with a mean score of 0.3156, the morality frame at 0.1606 and the blame frame at 0.0030.

Table 4, moreover, shows the human interest frame was the dominate frame in the first constructed week, then the fear frame became the dominant frame in the second and third constructed weeks.

Table 5: Frequency and Percentages of tone in COVID-19 coverage (first wave) in Swedish, Egyptian, and British media

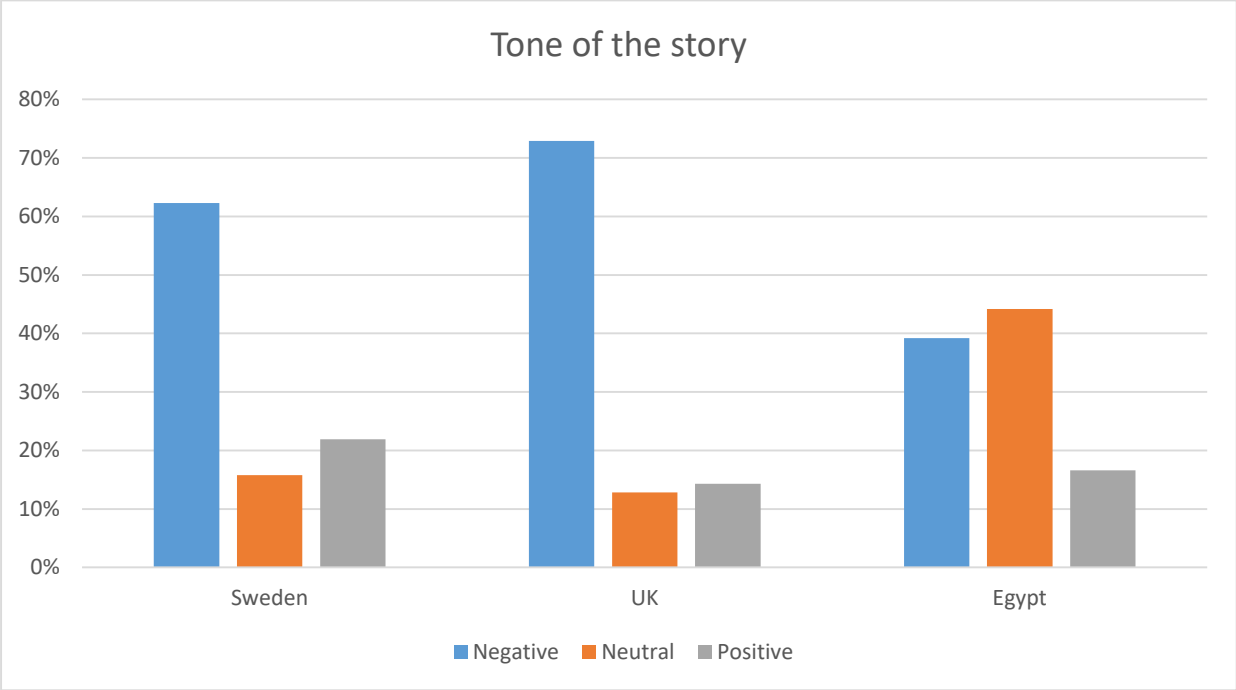
	County						Total	
	Sweden		UK		Egypt			
	Count	Within Country %	Count	Within Country %	Count	Within Country %	Count	Within Country %
Negative	114	62.3%	148	72.9%	78	39.2%	340	58.1%
Neutral	29	15.8%	26	12.8%	88	44.2%	143	24.4%
Positive	40	21.9%	29	14.3%	33	16.6%	102	17.4%
Total	183	100.0%	203	100.0%	199	100.0%	585	100.0%

For Sweden and Egypt Chi-square = 36.567 $p<.001$.

For Sweden and UK Chi-square = 5.307 $p<.007$

For Egypt and UK Chi-square = 55.624 $p<.001$.

Graph 5: Tone in COVID-19 coverage (first wave) in Swedish, Egyptian, and British media



R3, R5 and R7 inquired about the tone of media coverage of COVID-19 during the first wave in the three countries. In Sweden, as seen in Table 5 and Graph 5, 62.3 percent of the news articles had a pessimistic tone, 21.9 percent were optimistic and 15.8 percent were neutral. In the UK, 72.9 percent of the sampled news stories were pessimistic in tone, 14.3 percent were optimistic and 12.8 percent were neutral. In Egypt, the tone 44.2 percent of the coverage was neutral, 39.2 percent was negative and 16.6% was positive.

Chi-square tests examining the coverage between Sweden and Egypt and between UK and Egypt yielded statistical significance results ($p<$. 001). For the chi square test between Sweden and the UK, however, the result was statistically significant at the .07 level. This is important to report because of the relatively small sample analyzed. If this study been based on a larger sample size, it is likely the results would have reached the traditional statistical significance level of .05 (Fahmy, 2004). Accordingly, **H1 is supported.**

Finally, **H2** predicted a statistical difference in the a) attribution of responsibility frame; b) the economic consequences frame; c) the morality frame; d) the blame frame; e) the fear frame; f) the human interest frame; and g) the conflict frame scores in the news coverage among Sweden, United Kingdom and Egypt.

(A) Attribution of Responsibility Frame

Hypothesis 2a tested whether there is a difference in the attribution of responsibility frame score among the three countries:

Table (6) One Way ANOVA for the attribution of responsibility frame score

	N	Mean	Std. Deviation	Sig.
Sweden	183	.415	.2529	.000
UK	203	.304	.3026	
Egypt	199	.129	.1565	

From Table 6, the sample size in Sweden was 183, in the UK it was 203 and it was 199 in Egypt. The mean of the attribution of responsibility frame score was 0.415 with a 0.2529 standard deviation in Sweden. In the UK, the mean was 0.304 with a standard deviation of 0.3026 and in Egypt the mean was 0.129 with a 0.1565 standard deviation. Based on this data, the highest deviation was in the attribution of responsibility frame in the UK.

By using the ANOVA Test, the sig.=0.000, supporting hypothesis (H2a), which means that there is a statistically significant difference in the attribution of responsibility frame score in the coverage among the three countries examined.

Table (7) Post Hoc test for differences in the attribution of responsibility frame score among Sweden, the UK and Egypt

(I) country	(J) country	Mean Difference (I-J)	Sig.
Sweden	UK	.1114*	.000
	Egypt	.2862*	.000
UK	Egypt	.1748*	.000

*. The mean difference is significant at the 0.05 level.

The post hoc test showed that the difference in the attribution of responsibility frame score was between the three countries, as the Swedish score was greater than the UK score by a mean difference of 0.1114. Sweden's score was greater than Egypt's score by a mean difference of 0.2862. Additionally, the UK score was greater than the Egypt score by a mean difference of 0.1748.

(B) Economic Consequences Frame

Hypothesis 2b tested whether there is a difference in the economic consequences frame score among the three countries.

Table (8) One Way ANOVA for the economic consequences frame score

	N	Mean	Std. Deviation	Sig.
Sweden	183	.1670	.33502	.000
UK	203	.2504	.35997	
Egypt	199	.1186	.21369	

The mean of the economic consequences frame score was 0.1670 with a 0.33502 standard deviation in Sweden. In the UK, the mean was 0.2054 with a standard deviation of 0.35997 and in Egypt the mean was 0.1186 with a 0.21369 standard deviation. Consequently, the highest deviation was in the economic consequences frame in the UK.

By using the ANOVA Test, the sig.=0.000, , supporting hypothesis (H2b), which means that there is a statistically significant difference in the economic consequences frame score in the coverage among the three countries examined.

Table (9) Post Hoc test for differences in the economic consequences frame score between Sweden, the UK and Egypt

(I) country	(J) country	Mean Difference (I-J)	Sig.
Sweden	UK	-.08345*	.049
	Egypt	.04840	.220
UK	Egypt	.13185*	.000

*. The mean difference is significant at the 0.05 level.

The post hoc test showed that there is significant difference in the economic consequences frame score between Sweden and the UK, as the mean score for the UK is greater than the mean score for Sweden by a mean difference of 0.8345. There is also significant difference in the economic consequences frame score between the UK and Egypt, as the mean score for the UK is greater than the mean score for Egypt by a mean difference of 0.1318. There is no statistically significant difference between Sweden and Egypt.

(C) Morality Frame

Hypothesis 2c tested whether there is a difference in the Morality frame score among the three countries.

Table (10) One Way ANOVA for the morality frame score

	N	Mean	Std. Deviation	Sig.
Sweden	183	.7987	5.52427	.096
UK	203	.2507	.23002	
Egypt	199	.1606	.18081	

The mean of the morality frame score was 0.7987 with a 5.52427 standard deviation in Sweden. In the UK, the mean was 0.2507 with a standard deviation of 0.23002 and in Egypt the mean was 0.1606 with a 0.18081 standard deviation.

By using the ANOVA Test, the sig.=0.096, which is more than the statistically significant level 0.05. Consequently, the null hypothesis (H0) is accepted, which means that there is no statistically significant difference in the morality frame score in the coverage among the three countries examined

(D) Blame Frame

Hypothesis 2d tested whether there is a difference in the Blame frame score among the three countries.

Table (11) One Way ANOVA for the blame Frame score

	N	Mean	Std. Deviation	Sig.
Sweden	183	.0732	.01439	.000
UK	203	.1135	.01616	
Egypt	199	.0030	.00213	

The mean of the blame frame score was 0.0732 with a 0.01439 standard deviation in Sweden. In the UK, the mean was 0.1135 with a standard deviation of 0.01616 and in Egypt the mean was 0.0030 with a 0.00213 standard deviation.

By using the ANOVA Test, the sig.=0.000, supporting hypothesis (H2d), which means that there is a statistically significant difference in the blame frame score in the coverage among the three countries examined.

The post hoc test showed that there is significant difference in the blame frame score between Sweden and Egypt as the mean score in Sweden was greater than the mean score in Egypt by mean difference of 0.07021. There is also significant difference in the blame frame score between the UK and Egypt as mean score in the UK is greater than the mean score in Egypt by a mean difference of 0.01630. There was no statistically significant difference between Sweden and the UK.

Table (12) Post Hoc test for differences in the blame Frame score between Sweden, the UK and Egypt

(I) country	(J) country	Mean Difference (I-J)	Sig.
Sweden	UK	-.04027	.152
	Egypt	.07021*	.000
UK	Egypt	.11048*	.000

*. The mean difference is significant at the 0.05 level.

(E) Fear Frame

Hypothesis 2e tested whether there is a difference in the fear frame score among the three countries.

Table (13) One Way ANOVA for the fear Frame score

	N	Mean	Std. Deviation	Sig.
Sweden	183	.3536	.24349	.000
UK	203	.4815	.20655	
Egypt	199	.3279	.21953	

The mean of the fear frame score was 0.3536 with a 0.24349 standard deviation in Sweden. In the UK, the mean was 0.4815 with a standard deviation of 0.020655 and in Egypt the mean was 0.3279 with a 0.21953 standard deviation.

By using the ANOVA Test, the sig.=0.000, supporting hypothesis (H2e), which means that there is a statistically significant difference in the fear frame score in the coverage among the three countries examined.

Table (14) Post Hoc test for differences in the fear Frame score between Sweden, the UK and Egypt

(I) country	(J) country	Mean Difference (I-J)	Sig.
Sweden	UK	.12798*	.000
	Egypt	.02566	.528
UK	Egypt	.15364*	.000

*. The mean difference is significant at the 0.05 level.

The post hoc test showed that there is a significant difference in the fear frame score between Sweden and the UK as the mean score in Sweden is smaller than the mean score in the UK by a mean difference of 0.12798. There is also significant difference in the fear frame score between the UK and Egypt as the mean score in the UK is greater than the mean score in Egypt by a mean difference of 0.15364. Also, the post hoc test showed that there is no statistically significant difference in the mean of the fear frame between Sweden and Egypt.

(F) Human Interest Frame

Hypothesis 2f tested whether there is a difference in the fear frame score among the three countries.

Table (15) One Way ANOVA for the human interest frame score

	N	Mean	Std. Deviation	Sig.
Sweden	183	.4557	.30953	.000
UK	203	.5702	.29419	
Egypt	199	.3156	.28089	

The mean of the human interest frame score was 0.4557 with a 0.30953 standard deviation in Sweden. In the UK, the mean was 0.5702 with a standard deviation 0.29419 and in Egypt the mean was 0.3156 with a 0.28089 standard deviation.

By using the ANOVA Test, the sig.=0.000, supporting hypothesis (H2f), which means that there is a statistically significant difference in the human interest frame score in the coverage among the three countries examined.

Table (16) Post Hoc test for differences in the human interest frame score between Sweden, the UK and Egypt

(I) country	(J) country	Mean Difference (I-J)	Sig.
Sweden	UK	-.11446*	.000

	Egypt	.14016*	.000
UK	Egypt	.25462*	.000

*. The mean difference is significant at the 0.05 level.

The post hoc test showed that there is significant difference in the human interest frame score between Sweden and the UK as the UK's mean score is greater than Sweden's mean score by a mean difference of 0.11446. There is also significant difference in the human interest frame score between Sweden and Egypt as the mean score in Sweden is greater than the mean score in Egypt by a mean difference of 0.14016. Also, the post hoc test showed that there is significant difference in the mean of the human interest frame between the UK and Egypt by a mean difference of 0.25462.

(G) Conflict Interest Frame

Hypothesis 2g tested whether there is a difference in the fear frame score among the three countries.

Table (17) One Way ANOVA for the conflict frame score

	N	Mean	Std. Deviation	Sig.
Sweden	183	.2366	.35289	.000
UK	203	.2357	.33206	

Egypt	199	.0101	.08272	

The mean of the conflict frame score was 0.2366 with a 0.35289 standard deviation in Sweden. In the UK, the mean was 0.2357 with a standard deviation of 0.33206 and in Egypt the mean was 0.0101 with a 0.08272 standard deviation.

By using the ANOVA Test, the sig.=0.000, which is less than the significant level of 0.05, supporting hypothesis (H2g), which means that there is a statistically significant difference in the conflict frame score in the coverage among the three countries examined.

Table (18) Post Hoc test for differences in the conflict frame score between Sweden, the UK and Egypt

(I) country	(J) country	Mean Difference (I-J)	Sig.
Sweden	UK	.00090	1.000
	Egypt	.22656*	.000
UK	Egypt	.22566*	.000

*. The mean difference is significant at the 0.05 level.

The post hoc test showed that there is significant difference in the conflict frame score between Sweden and Egypt as the mean score in Sweden was greater than the mean score in Egypt by a mean difference of 0.22656., There is also significant difference in the conflict frame score between the UK and Egypt as the mean score in the UK was greater than the mean score in Egypt by a mean difference of 0.22566.

Additionally, the post hoc test showed that there is no significant difference in the mean of the conflict frame between Sweden and the UK.

So to sum up, the results of One Way ANOVA showed that there is a significant difference in the attribution of responsibility, economic consequences, blame, fear, human interest and conflict frame scores between Sweden, the United Kingdom and Egypt. Conversely, there was no significant difference in the morality frame score between the three countries, Accordingly, H2 of the study, which supported that there are both differences in and commonalities in the frames represented between the three countries, was mostly supported.

Chapter Seven

Discussion and Conclusion

1.Disucssion

Using a quantitative content analysis, this comparative study examined the media coverage of the first wave of COVID-19 in three different countries: Sweden, the United Kingdom and Egypt, in an effort to investigate how different media, political and cultural systems can impact the way the media frames a global health crisis and the most challenging pandemic in modern history.

The role of mass communication during pandemics and public health crises has been on the research agenda since the 1980s (Wete, 1988; Atkin & Wallack, 1990; Cline & Haynes, 2001; Nutbeam, 2000; Ellis, 2018;) as communications and accurate reporting are considered very crucial for managing risk during health crises (Vaughan & Tinker, 2009). All previous research proposes that media coverage acts as a compelling medium during a pandemic (Cho and Gower, 2006; Vaughan and Tinker, 2009) as it gives reasonable interpretation to the current situation during a crisis to help people assess the information by themselves (Gerwin, 2012, p.630).

Throughout history, many scholarly studies have been conducted to investigate the presentation of frames used by the media during heath crises. There was no unanimous finding on fixed frames used by the media in the coverage of all historical pandemics, though researchers shared some common frames that were discovered in the data analysis. Those frames included fear, attribution of responsibility, morality, economic consequences, human interest, conflict and blame

(Hume, 2000; Krawczyk, et al, 2020; Basch, Kecojevic & Wagner, 2020; Washer 2004;Wallis & Nerlich, 2005; Beaudoin, 2007; Tian and Stewart 2005; Berry, 2007; Warf-Higgins and Naylor 2007; Luther and Zhou, 2005; Sandell, Sebar & Harris, 2013; Vasterman & Ruigrok, 2013; Krishnatray and Gadekar , 2014; Adelakun & Adnan, 2016; Pieri, 2018; Barker & Geana 2018; Mutua & Oloo, 2020; Poirier, Ouellet, Rancourt & Rancourt, 2020; Lin and Le Pham, 2020; Chukwu et al., 2020).

The significance of this current study stems from its comparative approach to investigate how media in three countries, adopting three different preventive strategies to fight the spread of the pandemic: Sweden (herd immunity), Egypt (partial lockdown) and the UK (full lockdown), covered the pandemic. Further, there is a scarcity of research on the representation of frames within a public health crisis in Egyptian media, in general, and Egyptian news media, in particular and this study fills this research gap. In addition, the countries examined here have different cultures, news values, media and political systems, making it important to investigate how these differences may have influenced the media coverage of an unprecedented crisis that was described by António Guterres, the Secretary-General of the United Nations, as “the most challenging crisis since World War II.” (Leadrer, 2020, p.1).

1.1 Top frames across the three countries

The study found that the three major frames that dominated media coverage of the COVID-19 global pandemic in the three countries were the morality frame followed by the human interest and fear frames. The blame (othering) frame was the least frame identified. A closer examination revealed significant differences among the three countries in six out of the seven frames analyzed. These frames excluded the morality frame and included: the attribution of responsibility frame; the human

interest frame; the economic consequences frame; the conflict frame; the fear frame and the othering frame.

According to Neuman et al (1992)and Semetko and Valkenburg (2000), the morality frame puts the topic in the context of morals and good or bad behaviors. This happened in a similar scenario, when the morality frame was one of the top frequent frames in South East Asia (Ibrahim et al., 2010). The study discovered that the media coverage of Malaysian newspapers of the pandemic was dominated by three major frames: attribution of responsibility, morality and human interest (Ibrahim et al., 2010). According to a study by Diaz and Cova (2020), the public's conceptions about correct and wrong behavior varies when they decide on 'the morally right path of action' (p.4). Some of these different factors relate perfectly to public health behaviors during a pandemic (Diaz & Cova, 2020). For an individual, adopting the correct health behavior during a pandemic such as COVID-19 is done for two reasons: to avoid being infected by the virus and to curb its spread, which is called 'moral care foundation' (Diaz & Cova, 2020, p.4). The moral care foundation refers to caring about other people as an important moral behavior that necessitates acting in specific ways (e.g., social distancing) to protect other people from harm (Chan, 2020; Harper, Satchell, Fido, & Latzman, 2020; Qian & Yahara, 2020).

Accordingly, the researcher can conclude that despite each country had its own preventive restrictions, the media outlets in the three countries have all tied a necessity of following public health instructions (i.e.: social distancing, avoid crowded places, wearing facial masks) to good morals and behaviors to protect oneself and avoid harming others, stressing on the morality of following these measures.

1.2 Sweden

In Sweden, the morality frame was the most frequently used frame by the media in the coverage of COVID-19's first wave, followed by human interest and fear frames. Given the fact that Sweden has imposed no lockdown restrictions, they relied mainly on raising public awareness of good behavior and morals and the nation has relied largely on voluntary social distancing (Savage, 2020). According to Orlowski and Goldsmith (2020), this "very Swedish strategy" is attempting to integrate the sociocultural concept of "folkvett," which translates to people's wit (Löfgren, 2020, Para.9). These results echoed those findings by Sandell, Sebar and Harris (2013), in which they discovered that the media in Sweden put the responsibility of fighting the swine flu on the people's shoulders and their morals to safeguard the public health, as media was very transparent about virus updates (Sandell, Sebar & Harris, 2013).

In Sweden, the frequency of the frames used varied throughout the time of the analysis. The media outlets used the fear frame more than any other in the early outbreak of the virus in Sweden (first constructed week), while the human interest frame was the most frequent in both the second and third constructed weeks. These findings support previous literature, which proposed that the media coverage of pandemics passes through three stages: "sounding the alarm, mixed messages and containment" (Holland & Blood, 2010; Nerlich and Halliday, 2007; Ungar, 1998, 2008; Wallis and Nerlich, 2005; Washer, 2004; offe & Haarhoff, 2002;Vasterman and Ruigrok, 2013). This explains why, during the first weeks of the pandemic's outbreak in Sweden, the media used fear frames and fear mongering content to send alarming messages to the public (ex: Fördubbling av coronafallen i Sverige, which translates to: New cases double in very short time in Sweden). Then,

during the weeks of the peak and containment of the virus, the human interest frame was the most dominant, including stories about the impact of the pandemic on people and the impact of government decisions on the public , or any other story which its main topic about an individual(ex: Engelske stjärnan Hunter död i covid-19; it translates to: English star Hunter died with COVID-19).

This study, moreover, found that 62.3 percent of the news articles in the Swedish media were pessimistic, 15.8 percent were neutral and 21.9 percent were positive. This finding seems to be surprising as based on a study released by the Swedish nonprofit organization Public & Science (Vetenskap & Allmänhet) (2020), it described the media coverage of COVID-19 in Sweden as "less alarming."

1.3 The United Kingdom

The situation was different in the United Kingdom. The current study discovered that British media coverage during the first wave of COVID-19 was dominated by the human interest frame, followed by the fear and attribution of responsibility frames. The human interest frame includes stories that brought a human face to the crisis, or expressed the impacts of the pandemic (positive or negative) on a group of people or an individual. (ex.: 'We depend on God': gravediggers on frontline of Kano's Covid-19 outbreak). Surprisingly, the human interest frame was the more frequently used frame throughout the time of analysis (three constructed weeks). According to the previously mentioned three stages of pandemic media coverage, that were mentioned in the literature of media framing and infectious diseases (alarm, mixed messages and containment)(Holland & Blood, 2010; Nerlich and Halliday, 2007; Ungar, 1998, 2008; Wallis and Nerlich, 2005; Washer, 2004; offe & Haarhoff, 2002;Vasterman and Ruigrok, 2013), the majority of the British media dedicated the

most attention to the 'public' in their stories throughout these three stages of the pandemic's coverage. Since the study has found that the majority of the sampled articles in the British media had negative tone (72%), it explains that these human interest frame was used from a negative approach, such as harmful impacts on an individual/the public.

Previous literature suggested that the human interest was not a top frame in UK media coverage on previous pandemics. Recently however, Ogbodo and colleagues (2020), found the human interest frame was one of the top frames used by the international media on the coronavirus, with 24.6 percent of the entire samples of the study highlighting the impact of the virus on human beings across the globe. They discovered that both the Daily Mail and BBC have presented higher cases of 'negatives frames in human interest' reporting often more on the fatalities than the number of the people who recovered (Ogbodo et al., 2020, p.261). Accordingly, it may have generated panic among the public and may cause people's stress disorders (Ogbodo et al.,2020, p.261). The dominance in human interest stories also found in the current study could also be explained by the incident with the former advisor to the British Prime Minister Dominic Cummings. The story swept the British news websites during the period of analysis. Cummings breached the government's lockdown restrictions and was spotted in Durham city, despite his symptoms of COVID-19. This news was circulated widely among the randomly sampled articles and was received with harsh criticism, societal anger and calls on him to resign (Weaver, 2020).

According to a study released by the University College London (UCL), only three weeks after the Cummings revelations, people's willingness to follow lockdown orders in England plunged significantly (Fancourt, Steptoe & Wright, 2020). The

study tracked more than 40,000 individuals to measure their confidence in the government's COVID-19 strategy. On a scale from seven to one, the sampled people were asked to rate their trust in the government decisions (Fancourt, Steptoe &Wright, 2020). The study found that the average score was 5 before Cummings' incident, but it dipped to 4.5 in in the days following the incident. According to the study, it was considered the sharpest drop in the government trust (Fancourt, Steptoe & Wright, 2020). A similar scenario happened with the swine flu pandemic, in which human interest dominated the Indian news (Krishnatray & Gadekar, 2014).

The study, moreover, found that the fear frame was the second most frequently presented frame in the UK news coverage of COVID-19 (ex: Covid-19 pandemic accelerating says as review panel announced). This finding was expected, as the fear frame seemed to be frequent among the British coverage of pandemics (Washer, 2004; Pieri, 2018; Jorgensen, 2020). It echoes the findings of Jorgensen (2020,) who analyzed 100 high-circulation English-language newspapers around the world, using the LexisNexis UK database, investigating 9,387 stories about the outbreak. Jorgensen is the Director of Research Development and Environment, School of Journalism, Cardiff University. She has expertise in the study of the role of emotions in journalism, including in the coverage of disasters and crises. Jorgensen discovered 1,066 news stories that mentioned "fear" or related words, including "afraid," and "killer virus." This was especially true in tabloid newspapers such as the Sun and the Daily Mail, which were more likely to use fear-inducing language (Jorgensen, 2020). Moreover, according to a study published by the Reuters Institute, at least 26% of the British public believed that the media coverage of COVID-19 in the UK was too critical. (Reuters Institute, 2020). In 2018, Pieri found the fear frame was also the second most frequent frame in the British media coverage of Ebola. Moreover, in the

British media coverage of SARS, Washer (2004) discovered that in the beginning of the virus outbreak it was reported as “killer bug” or a “mysterious,” “lethal,” “untreatable” and “deadly pneumonia virus.” The news coverage used words such as “moving at the speed of a jet” to describe its quick spread (Washer, 2004, p. 2565).

The current study further discovered that 72.9 percent of the news articles were pessimistic, 12.8 percent were neutral and 14.3 percent were positive. The negative tone seemed to be frequent in the media coverage of COVID-19 in many countries and, specifically, the British media outlets. As Mutua and Oloo (2020) found that the majority of BBC news articles were pessimistic. Moreover, Krawczyk and his colleagues (2020) analyzed 26 million news stories from the front pages of 172 top online news sources across 11 countries including Britain from January to October 2020. They found heterogeneous media coverage on the pandemic; 16 percent of this coverage was articles that have a highly negative tone with topics about fear, crisis and the fatality rate (Krawczyk, et al, 2020).

On comparing the coverage, the attribution of responsibility frame was one of the most dominant frames in the UK media, but scored low in Egypt and Sweden. According to literature, the attribution of responsibility frame includes stories that refer to the act of responsibility by an individual, group or the government. As a result, it explains that the British media reported more stories about government efforts, individual initiatives and the public’s responsibility toward the virus containment/spread (Ex: Pressure on Dominic Cummings to quit over lockdown breach).

In the literature, the attribution of responsibly frame was defined as a “problem solver” (Muhamad & Yang, 2017). Scholars proposed that the attribution

of responsibility frames could impact the readers' decision and ability to contribute to problem solving. Moreover, the frame has been frequently used in media coverage of previous health crisis, such as hepatitis C, the swine flu and Ebola. Krishnatray and Gadekar (2014) found that the Indian media has used four main frames: attribution of responsibility, action, human interest, and fear and panic. Kee, Ibrahim and Mustaffa (2010) analyzed 1,542 news stories about the swine flu in Malaysia. They discovered a dominance of the attribution of responsibility frame among the sample including stories about government efforts and decisions to mitigate the spread (Kee, Ibrahim, Mustaffa, 2010).

Moreover, Attribution of Responsibly frame was discovered in the media coverage of Hepatitis C and SARS. Zakzouk (2016) analyzed the frequent frames used by the Egyptian media on coverage of Hepatitis C in between 2014 and 2016. He found that the most frequent frames were attribution of responsibility (government efforts), morality (precautionary measures) and fear (the outbreak of the crisis) by 69% of the sampled news stories (Zakzouk, 2016).

Beudoin (2007) conducted a comparative analysis to compare the frames used in the SARS coverage in two polarized media systems: The United States and China. Beaudoin analyzed 226 news stories from the Xinhua news agency and 226 stories from the Associated Press (AP) in the period from January 1, 2003, to February 26, 2004. The study used two units of analysis: the story and the word count. It found that a prevalence of severity and attribution of responsibility in the AP stories.

1.4 Egypt

In Egypt, fear was the dominant frame. The study found that the Egyptian media has frequently used fear, followed by human interest and morality frames in

their coverage of COVID-19; the blame frame was used the least often. Throughout the three stages of study, the Egyptian media frequently used the human interest frame in the first weeks of the outbreak, then fear was the top frame during the other two periods.

The fear frame refers to exaggerating stories that cause the public's panic or fear. That frame has been dominant throughout the period of analysis.). According to the previously mentioned three stages of pandemic media coverage, that were mentioned in the literature of media framing and infectious diseases (alarm, mixed messages and containment) (Holland & Blood, 2010; Nerlich and Halliday, 2007; Ungar, 1998, 2008; Wallis and Nerlich, 2005; Washer, 2004; offe & Haarhoff, 2002;Vasterman and Ruigrok, 2013), the majority of reported stories in Egyptian media used fear mongering content from the first weeks of the outbreak until the weeks of the containment stage (of the first wave) (ex: Corona raises a state of panic around the world). The stories include the number of deaths and the rising number of new infected cases.

The data analysis found that 44.2 percent of the Egyptian coverage of COVID-19 was neutral, 39.2 percent of the news articles were pessimistic and only 16.6 percent were optimistic. These findings mean that the majority of the sampled stories included both tones per each story (positive and negative), such as reporting the number of new deaths and the recoveries. In an article authored by Al-Laban (2020), analyzed the media messaging and performance during the outbreak of the pandemic. Al-Laban praised the Egyptian media for being "effective and balanced" in managing the crisis (Al-Laban, 2020, Para.3).

In Hamdy's article (2020), she found that the Egyptian media — both private and government — paid attention to COVID-19 news in China (international news) and then from the beginning of March, it focused mainly on European updates. By the end of the same month, there was a domestic focus, especially with the increasing number of infected cases in Egypt (Hamdy, 2020). Hamdy's analysis, along with this study's findings, might give a comprehensive understanding for the dominance of the fear frame in Egypt. During the first weeks of the pandemic's outbreak, the Egyptian media first used the fear mongering content in the international news reporting the crisis in the highly affected destinations, such as China and European countries including Italy and the UK. When the new infected cases increased in Egypt, the fear frame was adapted to local coverage (ex: Increase in Coronavirus infected cases among paramedics). Moreover, a study conducted by Abdelhafiz and his colleagues (2020) investigated the perceptions of the Egyptian public towards the coronavirus and discovered that most participants perceived the coronavirus as a life-threatening disease, which affects the elderly and people who suffer from chronic diseases (Abdelhafiz et al., 2020)

The fear frame was also common within the Egyptian media coverage of Hepatitis C. In Zakzouk's (2016) study, which investigated the Egyptian media coverage of Hepatitis C between 2014 and 2016, fear and attribution of responsibility were the most dominant frames. The results explained that the most disseminated news articles in the sample were about the explosion of the crisis (fear frames), government plans to mitigate the virus (attribution of responsibility) and awareness campaigns to improve societal behaviors and attitudes towards the disease and infected people (morality).

The same types of messaging happened during COVID-19. The Egyptian media had three major messages: the inevitable outbreak of the pandemic; the state being ready to face the virus; spreading all the precautionary measures needed and how to integrate them in the citizens' daily life so they can protect themselves (Khairy & El-Sharaawi, 2020).

The dominance of the fear frame contradicts with the testimonials of some Egyptian media scholars in an interview by the Al Wattan newspapers, one the major privately owned newspapers in Egypt, in which they asserted that the Egyptian media did not cause panic to the public in comparison to social media platforms (Abu-Dief & Romany, 2020).

1.5 Least dominant frames across the three countries

On another note, both the economic consequences and conflict frames were among the lowest frames representation in the three countries, which was unexpected especially because both frames have been dominant in other studies on COVID-19 and also other pandemics (Luther & Zhou, 2005; Beaudoin, 2007; Barker & Geana, 2018; Mutua & Oloo, 2020).

Economic consequences and conflict have been frequently used in the media coverage of SARS. In a comparative study, Luther and Zhou (2005) analyzed US outlets the New York Times and the Washington Post and China's People's Daily and China Daily to understand the dominant frames used by media in both countries. The researchers found that economic consequences, conflict, leadership, human interest and individual responsibility were the major frames used in both countries, but with different tones.

Beaudoin's study (2007), found the economic consequences frame among the most frequently used frames in the AP stories of SARS news coverage, in addition to severity and attribution of responsibility (Beaudoin, 2007)

Moreover, in the coverage of the Ebola crisis, the conflict frame was one of the most common frames used, while the economic consequences frame was one of those that had a limited presence. Barker and Geana (2018) investigated the Ebola frames used by the US media analyzing 718 stories from the Wall Street Journal, the New York Times and USA Today, over a period of two months (from September 30 to December 2, 2014). The study found that three major frames were dominant: conflict, action and human interest, while other frames had been found but with a limited presence, such as economic frames, mortality and responsibility (Barker& Geana, 2018).

A recently published study by Mutua & Oloo (2020) investigated the media frames of the COVID-19 coverage in international media outlets. They discovered that the most dominant theme was xenophobia, which is a part of the economic consequences and attribution of responsibility frames (Mutua & Oloo, 2020).

Finally, one of the major findings of this study is the minimal frequency of the othering (blame) frame, which was the lowest throughout all three countries, which means that the media coverage of COVID-19 in Sweden, the UK and Egypt used this frame in a limited number of articles. The blame frame is usually linked to a population that is geographically isolated, so it's quite often to assign blame and othering in the media content as a mechanism to reassure the public that the crisis is far away (Thomas et al., 2020). Moreover, according to the theory of social representation, the usage of "othering" in media is when the public blames the

emergence of a novel danger "on those outside one's own community (Washer, 2014, p. 2562). "When faced with news of a dangerous disease, people search for something to blame." (Ellis, 2018; p.7).

Throughout the history of pandemics, the blame frame has been dominant (Ungar,1998; Monson, 2017; Pieri, 2018; Ellis, 2018). "Even the names given to such viruses — the Spanish flu, the Hong Kong flu, the swine Flu — shows a cultural tendency to attribute them to "the other." (Ellis, 2018; p.7)

Accordingly, the scant usage of blame in the media coverage of the three countries in this study is a divergence from previous literature about media and pandemics. Another study investigated the frequency of the use of the responsibility frame in the Australian media coverage of COVID-19. It also found the "relative absence" of blame frames throughout the study period (from January 20 to March 31) (Thomas et al., 2020; p.11).

The low frequency of the blame frame in the media coverage of the three countries could be explained this way: Previous pandemics, such as SARS, Ebola and the Swine Flu were deadly, but did not spread as rapidly and easily as COVID-19 (Rogers, 2020). As per a WHO report released on March 25, 2020 (four months after the first confirmed case in Wuhan, China), there were 413,467 confirmed cases and 18,433 deaths across the globe (WHO, 2020). The othering frame may have been used frequently by media in past health crises to reassure people that the virus is far from the population, especially because it took time for these pandemics to transmit from far off countries. The situation with the COVID-19 pandemic was different, as the virus spread rapidly. The quick nature of the outbreak could have not given much time for the media to use the othering frame.

1.6 The Tone differences across the three countries

The tones representation across the three countries was different. The negative tone was higher in the United Kingdom (72.9%) followed by Sweden (62.3%) and the least percentage was in Egypt (39. 2%). While the positive news was higher in Sweden (21.9%) followed by Egypt (16.6%) and then the United Kingdom (14.3%). While the majority of neutral news was in Egypt (44.2%), followed by Sweden (15.8% and the UK with (12.8%).

The data analysis showed statistical significance in the difference between the tones of frames among Sweden, UK and Egypt. It yielded significant results at the .07 level. It is plausible had this study been based on a larger sample size, these results would have reached the traditional statistical significance level of .05.

The findings explained that the majority of the British and Swedish news used a pessimistic tone in their coverage to COVID-19 pandemic, shedding light mainly on the negative perspective of the news story. while the Egyptian media was neutral to with a great extent, they tried to include both pessimistic and optimistic aspects of the news story.

2. Conclusion

In conclusion, this study attempts to understand the media frames used by the six news outlets in three countries with different news values, political, cultural and media systems. Additionally, each one of these countries has adopted a different strategy to mitigate the virus spread: Sweden (herd immunity), UK (total lockdown) and Egypt (partial lockdown/curfew).

Throughout history, a large number of communication studies investigated the role of mass communication during pandemics and public health crises (Atkin &

Wallack, 1990; Cline & Haynes, 2001; Nutbeam, 2000; Wete, 1988; Ellis, 2018). Some researchers investigated the roles mass media played during crises, while others went further and tried to understand the impact media messages had on public perceptions (Adelakun &Adnan, 2016). Understanding media messages in mass media and communication research during a pandemic is crucial as it influences the perception of the public by choosing what specific information is to be published and what should not (framing) (Scheufele, 1999). It, moreover, impacts the individual's health choices by either overestimating or underestimating the health crisis (Berry, Higgins and Naylor, 2007). Media plays a pivotal role in the public response to any health crisis because it acts as a communication portal between governments, health institutions and the public (Mhiedly & Fares 2020). The current COVID-19 pandemic is an unprecedented health crisis in modern history. The urgency and novelty of the virus intensified media coverage that was already higher than any previous coverage of a modern health crisis (Ducharme, 2020). According to LexisNexis data, there were over 41,000 English-language print news articles only in January, included the word "coronavirus," and it was mentioned in more than 19,000 headlines (Ducharme, 2020). Accordingly, it's very crucial to understand the way media framed this news and what the most dominant frames were.

Comparative studies give an insightful understanding of different political and media systems. (Liu, 2012). The media coverage of a crisis offers a key interpretation of the system of news production in various countries and an understanding of the news routines (Liu, 2012). Scholars proposed that the media coverage during a crisis could be representative of news gathering routines at large (Herford, 2008; Zhou, 2008; Sun, 2010; Liu, 2012).

Through the quantitative content analysis methodology and with the application of the theoretical framework of both framing and social representation theories, the study offers significant insights on the scholarly research of media framing during a public health crisis. Moreover, it enriches the literature on news coverage of the COVID-19 pandemic. This study shed light on how differences in media systems can impact the media reporting on the same topic (COVID-19). The study, moreover, gives an understanding of media content in Egypt during public health crises, as there is a scarcity in scholarly studies in this area.

Results showed that in the total number of analyzed news articles (N=585), the top frames in the three countries were the morality frame in Sweden, the human interest frame in the United Kingdom and the fear frame in Egypt. Moreover, the study revealed that there was no significant difference in the morality frame score between the three countries. This finding explains that regardless of the fact that each country adopted a different strategy to mitigate the spread of the virus, the media institutions in the three countries framed the topics about the pandemic with a "moral and behavioral perspective."

Accordingly, the researcher can conclude that despite each country having its own preventive restrictions, they all agreed on disseminating public health content to raise awareness on the importance of following these instructions (ex: social distancing, avoid crowded places, wearing facial masks) to protect oneself and avoid harming others, stressing on the moral approach of following these orders.

The study mirrored the proposed model by the framing literature, which says that the media coverage of a public health crisis passes through three consecutive stages: the outbreak, mixed messages and containment. Egypt's first weeks of the outbreak

was dominated by human interest frames, then fear was the most frequently presented by the Egyptian media in the other two weeks. The opposite happened in Sweden. The media in the first few weeks of the outbreak used fear frames and content that cause panic among the audience, then human interest became the most dominant frame during the states of containment and mixed messages.

The British media was dominated by human interest (the majority of stories had negative tone) throughout the three stages (from January 31 to July 9), which explains that UK media gave more attention to the negative impact of the pandemic on people.

The study gives an insightful understanding of the importance of tone in a story. It also gives a concrete conclusion that frames can be presented both in negative and positive tones; sometimes the news stories can include both, which makes the story neutral. Though human interest was one of the top frames in Egypt, Sweden and the UK, it was included from a pessimistic perspective in both Sweden and the UK, while it was neutral in Egypt.

Moreover, for the first time in global pandemics and media studies, the study found a low representation of the blame (othering) frame, which is a divergence from previous literature about media framing and pandemics such as H1N1, SARS and Ebola, in which the othering frame was one of the most dominant frames. The researcher gave an explanation for the low score of the blame frame, pointing to the extremely rapid spread of the virus across the globe, which did not give much time for journalists to deal with COVID-19 as a far threat from the population. Instead, media used other frames to send alarming messages to the audience.

3. **Limitations**

This current study used a quantitative content analysis, which supports the literature with significant findings, but sometimes relying only on numbers is not enough to explain everything. Counting the frequency with which frames were used in the media coverage does not give a comprehensive background of the context of the story and the details included in the news articles, which changes the way a story is understood.

The researcher stresses on the significance of using both quantitative and qualitative methodologies of content analysis to give a more comprehensive understanding of the news content and the messages. The content analysis gives an understanding for the media content, but it does not interpret the impact of this content on the public and the perception or the impact of gatekeepers on the frames selection. This study further, used a deductive approach to content analysis, which verifies the existence of predefined frames in the news. An inductive approach analyzes news content and searches for as many frames as possible. This approach can conclude newly emerged frames and can discover new themes, so it gives wider understanding of the news.

The researcher and the independent coder who coded the sample of news stories are proficient in both Arabic and English, but they did not know the Swedish language. Accordingly, they used Google translate as they were not able to code the Swedish news articles. Despite the fact that some studies in the literature, such as Vries et al (2018) have used translation software which supports the practice, any automated translation software is still a machine that translates the content literally and might cause loss in some meaning.

The study also analyzed 585 articles. Sweden (183), the UK (203) and Egypt (199). None of the countries had an equal number of articles because in the first weeks of the outbreak (first constructed week) some newspapers such as Dagens Nyheter (Sweden) and Al-Ahram (Egypt) were reporting fewer than five articles per day about the coronavirus, which resulted in an unequal number of articles per country. Another issue was the peak and drop in cases that differed in each country. However, the researcher tried to mitigate that difficulty by choosing days that intersect the peak and lows in the three counties.

The study selected two different newspapers from each country, so the study's findings cannot be generalized for the news media in the three countries at large. The number of sampled news outlets is still limited compared to the big number of online and print newspapers in each country and care must be taken in the interpretation of these results. Future studies including more than two news outlets and print editions with a larger sample size would be more representative

4. **Recommendations and directions for future research**

The COVID-19 pandemic is a novel global health crisis that needs scholarly investigation from, and analysis by, media researchers to understand the influence of media content across the globe during the crisis. Much can be researched, such as the dominant frames, public perception to the virus, the influence of gatekeepers on the news selection process and the social media as powerful platforms during the pandemic: "was it an informative or misleading tool?"

The researcher found limited studies about media framing and pandemics in Egyptian media across online, print and broadcast platforms. Future research should investigate the media frames in Egyptian media. Moreover, the researcher

recommends future comparative studies should consider comparing media frames during health crises among Arab countries. Another area of future research could be possible in comparing media frames during COVID-19 and modern pandemics/epidemics such as the swine flu, Ebola, SARS or historical pandemics, such as HIV and the Spanish influenza.

Moreover, researchers can compare the way media framed the virus during the multiple waves in a specific country and across more countries. The researcher also suggests that future research should work on comparative studies between content produced during public health crises by media outlets and user-generated content (UGC), such as social media content including visuals (gifs, photos and memes) and text posts. The researcher further proposes that cross-cultural studies that compare multiple countries should employ native speaker (coders) who are proficient in the language of these countries and aware of the political and cultural context of these countries and media systems.

Meanwhile, future researchers should use a mixed method of content analysis (qualitative and quantitative) to have a more comprehensive understanding of the media content and discover new themes and frames. Moreover, researchers shall also conduct studies on how the media content during COVID-19 has influenced the public's perception of the virus.

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Appendix

Codebook

Code regular news items only - not editorials, commentaries, and readers' feedback.

Do not code:

- Editorials, commentaries, readers' feedback.
- Story listings. On some homepages you may find a listing of stories that appear in each of the various sections of the website. Do not code these listings.
- Cartoons and jokes.
- Weather reports (though you should code stories about the weather - a flood, heatwave, drought etc)
- Advertising.

1) News website

1. Aftonbladet
2. Dagens Nyheter
3. The Daily Mail
4. The Guardian
5. Youm 7
6. Al-Ahram

2) Country

1. Sweden
2. UK
3. Egypt

3) Day of Week

1. Sunday
2. Monday
3. Tuesday
4. Wednesday
5. Thursday
6. Friday
7. Saturday

4) Time

1. from 31 January to 19 March
2. from 24 March to May 11
3. from May 22, to July 9

5) Tone of the Story

1. Negative
2. Neutral
3. Positive

6) The Frames

1. Attribution of Responsibility

a) Does the story suggest that some level of government has the ability to ease the problem?

b) Does the story suggest that some level of the government is responsible for the issue/ problem?

c) Does the story suggest solutions to the problem/issue?

d) Does the story suggest that an individual or group is responsible for the issue/ problem?

e) Does the story suggest that the problem requires urgent action?

2. Human Interest

a) Does the story provide a human example or a human face in the issue?

b) Does the story employ adjectives or personal vignettes* that generates sympathy or compassion?

c) Does the story emphasize how individuals and groups are affected by the issue/problem?

d) Does the story go into the private or the personal lives of the actors?

e) Does the story contain visual information that might generate feelings of outrage, empathy, caring, sympathy, or compassion?

**A vignette is a short description, picture, or piece of acting which expresses very clearly and neatly the typical characteristics of the thing that it represents*

3. Conflict

a) Does the story reflect disagreement between parties/ individuals/ groups/ countries?

b) Does one party/ individual/ group/ country reproach/blame/abuse/contempt another?

c) Does the story refer to two/more opposite sides of the problem/issue?

d) Does the story refer to winners or losers?

4. Morality

a) Does the story include or refer to any moral message?

b) Does the story make reference to God and another religious belief?

c) Does the story offer specific social prescriptions about how to behave?

d) Does the story refer to any principles concerning the distinction between right/good and wrong/bad behavior?

5. Economic consequences

a) Is there a mention to any financial losses or gains now or in the future?

b) Is there a mention to the cost/degree of expense involved?

c) Is there a reference to economic consequences of pursuing a course of action?

6. Othering/blame frame

a) Are comparisons and contrasts made between China and the country of the news article (Egypt, Sweden or UK?

b) Does the article emphasis China issues as a country that are not health related?

c) Does the article blame other countries for being the reason of the virus outbreak?

7. **Fear frame**

a) Does the overall tone of the story established in the lead convey urgency or fear?

b) Are there terms used that imply danger or a large threat, such as “crisis”, “epic proportions”, etc?

c) Are comparisons made to other well-known historical epidemics?

d) Does the article contain explicit visual descriptions of COVID-19 symptoms?