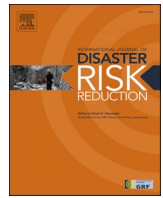**ELSEVIER**

Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Analysis of crisis communication by the Prime Minister of Australia during the COVID-19 pandemic

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ABSTRACT

Leadership and communication capabilities of federal leaders during crises are imperative to support and guide citizens' behaviors and emotions. The following content analysis examines crisis communication delivered by the Australian Prime Minister (PM), Scott Morrison during the COVID-19 pandemic. Communication delivered over seven months starting from the first reported case of COVID-19 in Australia, was analyzed through a process of coding to identify central organizing crisis communication frames and themes and measured against eleven main themes based on principles of Crisis and Emergency Risk Communication (CERC) recommended by the WHO and US Centers for Disease Control and Prevention. Transcripts were sourced from the PM's official website and 91 communiques were analyzed. Key epidemiological indicators and public health measures were reviewed over timeframe to examine changes in communication over the pandemic. Findings indicated that PM Morrison included many features of CERC within his official messaging. Our analysis revealed that the original framework was limited in its scope to encompass certain messages and thus the allocation of new frames, 'public health and medical advice' and 'assuring and commending the public and institutions', allowed for a more thorough analysis of communication during a novel global health pandemic. The temporal analysis demonstrated that the government's policy and communication temporally followed case numbers and relative threat of the virus. This study has provided an in-depth review of CERC during the first phase of the COVID-19 pandemic. New frames and themes for the current CERC framework are suggested which can be transferable to other crises in Australia and other countries.

1. Introduction

The COVID-19 pandemic brought a halt to the 'normal' everyday lives of people in all societies and continues to constitute a global threat to public health. This public health emergency calls for far more than only a healthcare and medical response, requiring engagement of all citizens, directed action from governments at all levels, and multistakeholder policy implementation [57]. On February 15th, 2020, the World Health Organization (WHO) Director-General, Dr Tedros Adhanom Ghebreyesus said "we're not just fighting an epidemic; we're fighting an infodemic." [53], highlighting the difficulty of communication when there is an urgent demand for information and temporality of facts.

According to the WHO, federal leaders have the responsibility to

guide, direct and deliver communication, which is transparent, trustworthy, timely, and accurate [59]. In Australia, a notable COVID-19 response was initiated on the March 21, 2020 when the total number of cases reached 1000 and doubled in the following three days [17]. A $2.4 billion health package was announced by the Australian Government, with $30 million allocated towards effective communication [52]. Although some uncertainty remains regarding particular approaches such as school closures, overall, the governmental response has been well received by the public and is reflected in low levels of transmission and mortality [12]. It is noted that robust preparedness planning influenced by experiences from the SARS and H1N1 Swine Flu pandemics also assisted in the swift measures taken [37]. Preliminary commentary on how the Australian media disseminated public health information delivered by the Australian Government acknowledged an

evidence-based information sharing approach, emphasizing the possible severity of the issue, whilst at the same time avoiding sensationalist rhetoric [44]. However, in-depth analysis of Australian Prime Minister (PM), Scott Morrison's, crisis communication over the course of the pandemic has not been previously examined. *The Australian Health Sector Emergency Response Plan for Novel Coronavirus* recommends that communication is a two-way process and should be transparent, timely, and acknowledge uncertainty. Furthermore, under this plan, the PM assumes responsibility and coordinates the national emergency response, whilst also acting as the primary government spokesperson [2].

1.1. Framing theory

Framing is a continuous process of development and understanding of a context in an unravelling situation [50]. Frames are highly relevant in public health, as they are tools in which governments and media can influence the viewpoint of the public and incite specific behaviors [41, 49]. Governmental frames are primarily used to enable and craft policy, whilst media framing aims to decode social reality [7,36]. Although viewers may theoretically understand and process information in different ways, when limited information is available, understanding tends to reflect how information is initially presented [49]. Within health research, framing theories have been applied to several research areas including intention to vaccinate, health communication, obesity, breast cancer/mammography, alcohol consumption and sexual health [18,21,24,29,47,58]. Within the COVID-19 pandemic to date, the analysis of framing is limited to media, with little analysis of framing used by governments and specifically leaders [26,42]. The literature suggests that successful leadership and communication during emergencies must engender trust and empathy through transparent, accurate and timely information [22,32,39]. Inclusive language use such as 'we', 'us' or 'it's in our hands' and using a dialogic approach which acknowledges emotions, helps move beyond persuasion to encourage collective responsibility [32]. Furthermore, the way in which uncertainty is framed can make risk appear smaller or larger (e.g., 97% survival versus 3% mortality) [32]. To reduce public scrutiny of 'they should have known' dialogue, sticking to the facts as much as possible and engaging the public as a legitimate partner can support overall cooperation [32]. Finally, as a large proportion of information delivered by authorities passes through media filters, analysis of the deliberate ways in which leaders choose to communicate can not only engage risk reduction responses but also has an extensive flow-on effect to global public health. The notable lack of research on crisis communication delivered by leaders in pandemic/epidemic research remains relevant as findings from this study may facilitate the adjustment required during the changing conditions of a crisis.

1.2. Crisis communication

Crises are characterized by increased levels of uncertainty and thus require direction, action, clear information and accountability [57]. The most common forms of health communication when conveying public health messages or emergencies are risk communication and crisis communication [56]. Risk communication is based on informing the public of potential risks, through principles of persuasion which target and promote specific behavior change [48,55]. Crisis communication in contrast, is traditionally associated with private industries and involves exchange of information and mitigating negative outcomes caused by a crisis [15,45,55]. In the field of crisis communication, several models exist e.g., STREMII Model, Social Media Crisis Management Matrix and Framework (SMCMF), Situational Crisis Communication Theory (SCCT), Interactive Crisis Communication Model (ICCM) and Crisis and Emergency Risk Communication (CERC) [8]. Whilst all models have components aimed to reduce, contain and mitigate harm caused by a crisis, the majority focus on reputational threat to organizations

perpetuated through social media [8]. Therefore, CERC was chosen as the most appropriate model for this study as it provides an evidence and theory-based framework for leaders to communicate both risks and benefits under urgent time constraints, raise public awareness, and avoid uncertainty surrounding risk through all the five stages of a crisis [8]. CERC's integrated model acknowledges that any emergency is progressive and affects different stakeholders at different times [30,34]. CERC is based on six main principles and involves escalating communication through five cyclical stages: pre-crisis, initial event, maintenance, resolution and evaluation [9,34,45]. Research that explores the application of CERC in a political context is limited. One study assessed crisis communication delivered by the Puerto Rican Government surrounding the Hurricane Maria crisis and found that ineffective implementation of CERC themes contributed to negative public perceptions particularly surrounding trust and credibility [1]. Further, analysis of communication by government and federal leaders using the CERC model remains limited and thus applied research relating to crises such as COVID-19 is imperative to building preparedness capacity and understanding how leadership communication influences public behavior.

The current study aims to address these gaps in CERC research, add to crisis communication research and in doing so, better prepare for future pandemics. This research specifically focuses on the quality and progression of crisis communication delivered by the Australian Prime Minister (PM) Scott Morrison during the first phase of the COVID-19 pandemic. Analysis of media releases, media statements and press conferences delivered by Scott Morrison regarding COVID-19 was undertaken to answer the following research questions:

RQ1: How does the PM frame COVID-19 in media releases, media statements and press conferences?

RQ2: To what extent do official communications on COVID-19 by the PM align with CERC themes and principles?

RQ3: To what extent are COVID-19 communications by the PM temporally aligned to case numbers, policy measures and phases of the crisis?

The structure of the paper is as follows. Section 1 provides context, rationale and aim of the research followed by the method and research design in section 2. In this section we also describe coding categories for framing, the CERC framework and the temporal methods used to track changes of communication over the study period. In section 3 we present the results of (1) framing, (2) CERC and (3) the temporal analysis of the pandemic. In section 4 we review our findings and discuss their implications for policy development during the first wave of the pandemic. In section 4 we further outline recommendations for improving the current CERC risk framework and government risk communications policy/ strategies during crisis situations. The paper concludes by acknowledging the limitations of the study and summarizing the results and implications for further crisis communication research.

2. Material and methods

2.1. Data collection

This study undertook a content analysis of Australian COVID-19 media releases, media statements and press conferences to explore the different frames and themes of CERC used by the Australian PM throughout the period from January 25, 2020 to July 1, 2020. The initial date marks the first confirmed case of COVID-19 in Australia and the establishment of the first International Health Regulation Emergency Committee regarding the outbreak of coronavirus [60]. On the July 1, 2020, data collection commenced and as of this date 24,916 cases of COVID-19 had been confirmed and 517 deaths recorded within Australia [17]. Data was collected by sourcing media releases, media statements and press conferences in the form of transcripts from www.pm.gov.au. Included transcripts were selected based on whether or not information was directly delivered by Scott Morrison and if they concerned COVID-19. In cases where the PM had guest speakers, analysis of

communication delivered by guests was also included. Any other forms of communication delivered by health ministers, state premiers or communication not related to COVID-19 were excluded. Of the 96 transcripts directly sourced from the PM's office, 91 were included for analysis, with five excluded as they had no relevant information concerning COVID-19 or were an exact repetition of a previous transcript. The average length of the transcripts, including questions by journalists, was 2077 words.

2.2. Data analysis

To identify frames used by the PM (RQ1), transcripts were coded for their central organizing ideas utilizing a predetermined framework (See Table 1 for detailed definitions of framing categories). The chosen frames were adapted from a number of papers that previously examined framing in public health communication and epidemic/pandemic contexts, with most frames drawn from the Lee and Basnyat [30] study which analyzed framing from press releases to news stories during the 2009H1N1 Swine Flu Pandemic [4,23,30]. The coding step took a dichotomous approach, assigning yes or no for the presence or absence of the frame, allowing for assigning of multiple frames. The screening and coding process for all data was done by the two primary authors, NRB and AB. The two authors screened an equal amount of data and all results were made available on a shared document. Initial and ongoing analysis was discussed by the full research team to enhance rigor and achieve robust results. The process of analysis and team discussion was continued until consensus was reached. Conceptualization of ideas, themes and frames were made and are found in the results section. An"other" frame was added to the framework to allow for any potential new themes that emerged in the COVID-19 context.

To answer RQ2, an analytical framework adopted by Andrade et al. [1] was used and included eleven main themes which encompass elements of the CDC CERC manual and the WHO's steps of communication in crisis (See Table 2 for detailed definitions). These themes indirectly assessed the quality of CERC communication in relation to four conceptual domains: trust, credibility, transparency, and accountability. This step of coding also took a dichotomous approach, assigning yes or no for the presence or absence of themes, allowing for assigning of multiple themes.

To identify how communication changed and developed over the course of the pandemic (RQ3), the five phases developed by The Grattan Institute were used to represent periods of time [20]:

Table 1
Framing – coding categories.

Central Ideas	Examples
Basic Information	Factual information or updates on COVID-19 e.g., number of fatalities, confirmed cases
Preventive information	Non-Pharmaceutical interventions recommended and/or enforced through policy and government e.g., handwashing, social distancing, banning congregation of groups, closing of venues, data collection, COVID Safe app
Treatment information	Treatment options including what to do, and where to go e.g., fever clinics, drive through testing, GP advice, telehealth
Medical research	New medical findings e.g., vaccine development, virus mutations, new drug trials, technological advances
Social context	Impact on social activities, schools, events
Mental health in isolation
Self - efficacy
Social responsibility
Political and economic context	Economic information e.g., Jobkeeper, Jobseeker, economic stimulus package
Tourism, travel
Lockdown
Personal stories	Human interest stories
Other	Open ended code for any data that does not align with the above frames

Table 2
CERC themes.

Themes	Description
1. Key messages to the public	Specific information directed to public
2. Actions currently being taken	Description and/or listing of actions being taken to control the crisis
3. Actions that will be taken	Description and/or listing of actions that will be taken to control the crisis
4. How the public can help	Guidance and description of activities on how the public can help crisis containment and response
5. Where to look for more information	Guidance and referral to more information. E.g., websites or phone hotlines
6. Expression of empathy (trust)	Acknowledgment of validity of emotions
7. Clarification of facts/calls for action (credibility)	Description of what is known in clear language accessible to all education levels
Data is sourced from experts
Statements supported by accurate facts and statistics Errors are quickly corrected
8. What is not known (trust/ transparency)	Uncertainty is acknowledged
Discussed strengths and weakness of data
Clarified unknown information in a transparent manner (e.g., "I don't know" as opposed to "I can't answer that")
Avoidance of speculation
Provision of valid reason for a lack of answer
9. Process to obtain answers (trust/ transparency)	Description of process to obtain information
Explanation of what is contributing to delays
Speech is accompanied/reinforced by visual aid
10. Statements of commitment (accountability)	Stated commitment to acquiring and providing new information as soon as possible
11. Information referrals/ scheduled updates (transparency)	Guidance of where to obtain information that expands on speech content

- Phase 1 - Containment from January 23, 2020;
- Phase 2 - Reassurance amid uncertainty from February 01, 2020;
- Phase 3 - Cautious incrementalism from March 01, 2020;
- Phase 4 - Escalate national action from March 15, 2020; and
- Phase 5 - Transition to a new normal from April 26, 2020.

In addition to media communication and the five-phases, data on Australian weekly case and mortality figures were accessed from www.covid19data.com.au. Policy implementation data was sourced from The Grattan Institute [19]. Policy stringency index measures were also included and accessed from Oxford COVID-19 Government Response Tracker (OxCGRT) [23]. See Appendix A for details of the Oxford University indicators. Finally, to enhance the temporal analysis, mapping national case numbers and mortality by weeks over the course of the study timeline was performed. Results were aligned with implementation and changes to national policies. The Policy Stringency Index (PSI) was further plotted against weekly case numbers, mortality and policy implementation.

3. Results

Of the 91 transcripts analyzed, 22 were titled as media releases (24.2%), 18 titled as media statements (19.8%) and 51 titled as press conferences (56%). Media releases, statements and press conferences are often used to announce, disseminate and inform the public about complex situations [38]. Media releases often present a mix of information which are used to attract both journalists and the public [51]. Despite similarities to news stories, they typically have a communicative purpose to promote the given institution or in this case the government's position [51]. Press releases are extensions of media releases, in that they allow for two-way communication, in the form of journalist questions [51]. Unlike the latter two communications, media statements usually do not present new information and commonly reinforce or react to what has already occurred [15]. The average length of media releases was 717 words with media statements being slightly longer with an

average length of 1310 words. Press conferences were the longest form of communique with an average length of 6448 words. The PM delivered 100% of the media releases and media statements, whilst in press conferences it was common for him to call on guest speakers. Speakers included Chief Medical Officers, the Minister for Health, the Treasurer, relevant state members, State Premiers and Local Members of Parliament. A dichotomous approach to coding was undertaken to identify dominant frames and CERC themes found in media releases, media statements and press conferences. Appendix B includes the findings of all communiques. Table 3 presents the dominant frames and CERC themes utilized in total communiques and will be referred to throughout this analysis.

3.1. Framing

The 'political and economic context' was the most dominant frame in 76 (83.52%) of the transcripts analyzed, with statements relating to economic policy implementation, economic support and national cabinet decisions (see Table 3). In press conferences, information expanded on economic impacts and control measures that were/would be taken during the pandemic, financial allocation, creating and maintaining jobs, priority areas of reform and budget matters. For example:

> "The health impacts of the coronavirus are not the only impacts of this virus on the global economy and indeed on the Australian economy. We are very mindful of these impacts …. This is not like a global financial crisis. This is a global health crisis. And the world economy has become increasingly interconnected and interdependent over many, many years." (PC, 25/02/2020).

The 'other' frame was noted in 62 transcripts (68.13%) and was further coded into four different frames (see Table 4 for subdivision of 'other' frames). In media releases, referral to state and territories, commending institutions and actions guided by medical advice were found. In press conferences referral to public health and medical bodies dominated the 'other' frame. Furthermore, it was noted that referral to other countries dominated the communiques during the beginning of the pandemic whereas commending the public/institutions, referral to state and territories and use of medical advice remained throughout.

Below is an example of referral to public health and medical expertise and referral to states and territories:

Table 3
Dominant frames and themes utilized in total communiques: Framing & CERC (n = 91).

Frames and Themes	Frequency in Total Communiques		Rank
	No.	Percentage	
Framing			
Political & economic context	76	83.52%	1
Others	62	68.13%	2
Basic information	61	67%	3
Social context	55	60.44%	4
Preventive information	54	59.34%	5
Treatment information	39	42.86%	6
Medical research	16	17.58%	7
Personal stories	4	4.4%	8
CERC			
Actions being taken	79	86.81%	1
Key messages to the public	67	73.63%	2
Statements of commitment	63	69.23%	3
Actions that will be taken	61	67.03%	4
Clarifying facts/calls for actions	56	61.54%	5
Expression of empathy	46	50.55%	6
How the public can help	40	43.96%	7
What is not known	33	36.26%	8
Information referrals	28	30.80%	9
Where to look for information	26	28.57%	10
Process to obtain answers	10	11%	11

Table 4
Sub - divisions of "other" frame.

Sub - frame	Frequency (n = 62)	Percentage (frequency/total other frames (62) *100)
Referral to public health and medical expertise	19	30.65%
Assuring and commending the public and/or institutes	18	29.03%
Referral to states and territories	15	24.19%
Comments and referral to other countries	10	16.13%

> "At all times, our actions are guided by the best possible medical advice, while putting the economic and social wellbeing of all Australians front and center of our response." (PC, 25/03/2020)

> "The medical experts tell us that for most Australians in good health, who contract the virus, they will experience a mild illness." (PC, 12/03/2020)

> "I particularly want to thank the New South Wales Government as I do the Victorian Government, the Queensland Government and others who have been working very closely with the Commonwealth as we've been managing this very serious issue, but one that Australia was well equipped to deal with." (PC, 31/01/2020)

The third dominant frame was 'basic information' (n = 61, 67%) and was a prominent feature in media statements often delivered by PM Morrison as an introduction to his statement. Information related to statistics surrounding confirmed/active cases, mortalities, recoveries and testing capacity. Further information included the number of COVID-19Safe app downloads and information on transmission of disease. Within press conferences this frame followed the same vein found in media releases and media statements and expanded further on facts, medical resources, economic figures, and funding. For example:

> "This virus began in China and has now reached some 114 countries. More than 124,000 have contracted the virus, including 140 here in Australia. This virus is also highly transmissible and for those Australians whose health is more vulnerable, especially the elderly, the risk is more severe." (PC, 12/03/2020)

> "There have been over 7,500 confirmed cases in Australia and sadly 104 people have died. There are now around 500 active cases in Australia, and over the past week, daily infection rates have remained low. Testing remains high, with more than 2.2 million tests undertaken in Australia." (MS, 26/06/2020)

The remaining dominant frame was 'social context' which was found in 55 (60.44%) transcripts and related to restrictions, changes to social activities and gatherings, school closures, social responsibility and mental health. When 'social context' frames were noted, they were often paired with information on specific dates or referred to specific policies, such as the 3-step framework:

> "Premiers and Chief Ministers agreed to implement, through state and territory laws, new Stage 1 restrictions on social gatherings, to be reviewed on a monthly basis. Australians should expect these measures to be in place for at least 6 months." (22/03/2020) (MS)

'Preventive information' was found in 54 (59.34%) transcripts and concerned medical care and economic prevention measures:

> "Ensure hand washing facilities are accessible for staff and supplied with adequate soap and paper towels." (20/3/2020) (MS)

Frames that were least prominent across all sources included 'personal stories' 4 (4.4%), 'medical research' 16 (17.58%) and 'treatment information' 39 (42.86%).

3.2. CERC analysis

CERC analysis was based on the same data collection methodology as for framing (see Appendix B). In the 22 media releases, the dominant themes were actions being taken, key messages to the public and statements of commitment. In the 18 media statements analyzed, the dominant themes were, actions being taken, key messages to the public and actions that will be taken. Amongst the 51 press conferences, the dominant themes were actions being taken, statements of commitment and clarifying acts/calls for action.

Findings of CERC themes are discussed by commonality as shown in Table 3. The most common theme was 'actions being taken' found in 79 (86.81%) of all communiques. PM Morrison frequently mentioned actions being taken by himself or his government. He explained present activities relating to health services and economic funding to specific areas. Description of actions often involved the discussion and agreements made in National Cabinet meetings and highlighted activities which would help reduce the burden of the virus on the community. For example:

> "Leaders met last night for the second National Cabinet meeting and agreed to further actions to protect the Australian community from the spread of coronavirus (COVID-19)." (MS, 18 /03/2020)

> "As I say, we are one week down almost, and we are making good progress and we can report further to you on that tomorrow. That also involves making good progress on things like testing kits, personal protective equipment, respirator supplies, the status of those and the supply lines are in place and they are strong and that is enabling us, I think, to make a lot of progress.' (PC, 23/04/2020)

The second most common theme was 'key messages to the public' found in 67 (73.63%) of communiques and included direct messages regarding travel, behaviors such as protective measures and where to access economic support. For example:

> "For all Australians travelling overseas to level 3 - 'reconsider your need for overseas travel at this time." (MR, 13/03/2020)

> "In line with these principles, visits should be limited to a short duration, a maximum of two visitors at one time per day and conducted in line with social distancing practices." (MS, 21/04/2020)

The third most dominant CERC theme was 'statements of commitment' and was found in 63 (69.23%) of communiques and often paired with the prior two most dominant themes. It described how the government was committed to doing its best to contain and control the virus and emotive language was sometimes used for emphasis.

> "The Australian Government continues to monitor and respond to the COVID-19 outbreak as it evolves. We will work in close cooperation with state Government authorities and our international partners to coordinate our response and keep Australians safe." (MR, 05/03/2020)

> "We are focused on saving lives and saving livelihoods and this new support package will provide much needed care and help to so many Australians facing hardship at no fault of their own." (MR, 29/03/2020)

'Actions that will be taken' was found in 61 (67.03%) of all communiques and involved National Cabinet agreements and included projected dates of completion. For example:

> "As a next step in our response, the National Cabinet agreed to expand testing criteria across Australia to all people with mild symptoms of COVID-19. This will ensure cases are quickly identified." (24/04/2020) (MS)

'Clarifying facts/calls for action', was identified in 56 (61.54%)

communiques and was noted as information found in responses by the PM to journalist questions. Such as:

> "Medical advice. I mean, this is how we're making these decisions. We're making decisions on the basis of the best expert advice and that it will, certainly the case when it comes to the medical issues and the health issues we have to consider" (13/03/2020) (PC)

Referral to experts' knowledge and statistical facts made up the majority of coding and was co-coded with the 'other' frame found during the initial framing analysis. Less common CERC themes included 'expression of empathy', 'how the public can help', 'what is not known', 'information referrals/scheduled updates', 'where to look for more information' and 'process to obtain answers.' (See Appendix C for quotes surrounding these themes).

PM Morrison's communication included important aspects of CERC. In all forms of communiques, he was consistent in explaining the actions that were being taken, provided clear messages to the public, stated his commitment to acquiring and providing information, often accompanied with specific timeframes and clarified facts, utilizing guest speakers and expert opinions. Areas that were not as visible included expression of empathy, acknowledgment of uncertainty, how the public could help and where to look for further information.

3.3. Communication over 5-phase response/temporal analysis

To understand the extent to which communication evolved during the first wave of the pandemic in Australia (RQ3) (January 25, 2020 to July 1, 2020), the five-phase response time periods were used, and common frames and themes noted. Transcript mediums were analyzed as a whole and occurrence of frames and themes across distinct phases of the pandemic can be found in Appendix D. Fig. 1 provides a synopsis of the representation of weekly cases, mortalities, policy stringency, the five phases of Australian response, dominant frames and CERC themes across each phase. Furthermore, specific policy measures introduced at different stages during the pandemic and Policy Stringency Index (PSI) are plotted.

Fig. 1 illustrates how the government's policy and related communication temporally followed case numbers and relative threat. During the two initial phases, specific policy measures pertaining to travel restrictions and border closures were undertaken in response to low national caseload and the absence of community transmission. Communication during these phases was dominated by 'clarifying facts/calls for action', 'actions being taken' and 'key messages to the public'. During the third and fourth phases, case numbers and mortalities were at their peak and PSI at its highest. The major policy implemented was the imposition of three stages of lockdown. Communication during these phases centered around 'statements of commitment' and 'political and economic context' frames/themes. Cases and mortalities were observed to drop after this peak, marking the potential effectiveness of these measures. Following this period marked the final phase of 'transition to new normal'. Slight increases in case numbers and mortalities were observed however PSI remained relatively stable and commitment to a new normal was reflected in PM communiques as he continued to state that the Australian public would have to learn to live with the virus around them.

It is noteworthy that the 'political and economic context' frame became a prominent, if not sole topic/theme in the last two phases. The frame that was present across all phases was 'actions being taken'. This frame was used for communicating the government's response at time of communication. Less common frames/themes included 'treatment information' and 'how the public can help'. This is perhaps due to much of this relevant information being addressed by specific media and press conferences delivered by health ministers and experts.
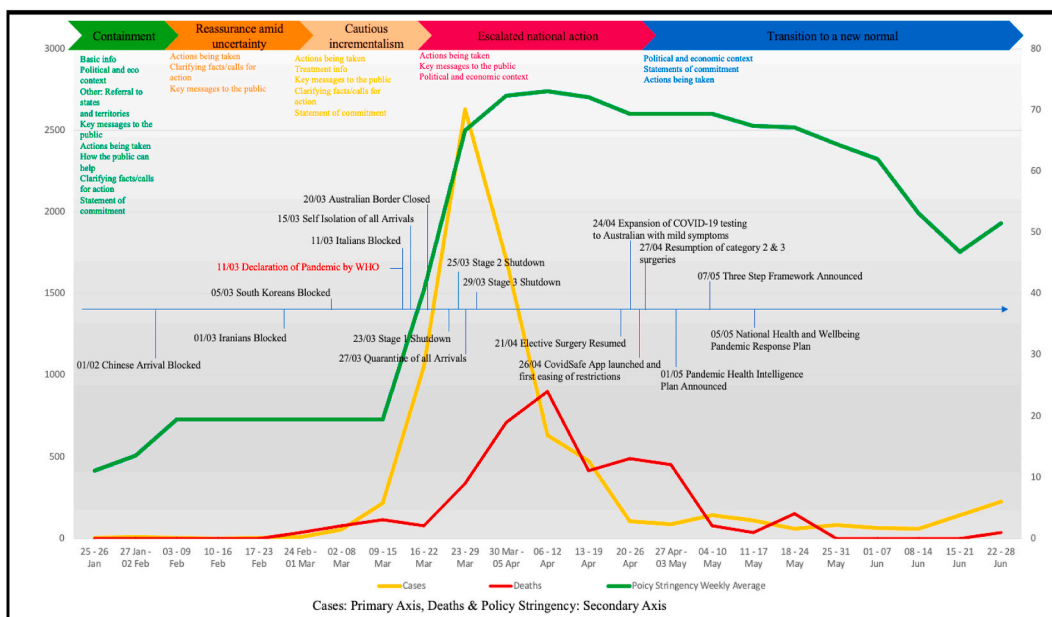
Fig. 1. Presentation of government communication in Australia in the context of weekly COVID-19 cases, mortalities, five-phase response and policy stringency index.

4. Discussion

The global COVID-19 pandemic has provided the opportunity to examine how different leadership styles manifest through crisis communication responses. This study has shown that the Australian PM Scott Morrison's communication was informed by scientific and medical advisory committees such as 'The Australian Health Protection Principal Committee' (AHPCC) [2]. The quick mobilization of public health strategies such as physical distancing and hygiene advice illustrates respect for science-based evidence and global health recommendations. This approach is important when considering the concept of individual sense making whereby the repeated presentation of key facts and information is critical to reduce the impact of competing views prevalent in mainstream media [6,27,43]. This section will further demonstrate this by discussing framing methods, alignment to CERC and how communication evolved across the five phases of the pandemic over time.

4.1. Framing

The 'political and economic context' frame was a dominant theme throughout all forms of communiques. This is not surprising given that COVID-19 has impacted national and global economies due to the need for many restrictive measures to control the transmission of the virus. It is likely that as we move forward in the pandemic, political and economic information will remain present in communication delivered by leaders, however there is a risk that if this theme dominates the communication space it may result in pandemic fatigue. Pandemic fatigue is a natural reaction as people adapt to the threat and adversity caused by COVID-19 [59]. Despite fear being a known motivator for protective behavior, when it is sustained, demotivation in both behavior and effort to seek information may occur [59]. Thus, it seems prudent that leaders use a diverse range of framing techniques so as not to deter engagement with important public health messages.

PM Morrison did, and continues to, utilize credible science-backed sources and medical expertise to guide the Australian COVID-19 response and this was particularly evident in the subdivided 'other' frame relating to public health and medical advice. Strong reliance on expert recommendations and ensuring partnerships 'using one voice' is

recommended in all stages of a crisis and is known to foster community engagement and trust towards activities and/or targeted messages [11]. This new frame appeared frequently in press conferences and was reinforced with guest speakers who provided their expertise. It was noted that when speakers from health domains and specifically New South Wales Premier, Gladys Berejiklian, were invited to speak; they often used more empathetic and emotive language when speaking compared to the PM himself. Expressing empathy and tailoring messages with emotion are key features of crisis communication recommended by the CDC and WHO [11,59]. Given that COVID-19 is a unique disease, the framework utilized by Andrade et al. [1] was limited in its scope to encompass the breadth of messages that were sourced, as many statements could not be accommodated by the original framework. The initial framework encompassed a code for medical research, however due to the novel nature of the disease very little medical research was reported. Whereas public health and medical advice regarding non-pharmaceutical interventions and preventive health messages were common due to the currency of knowledge required. The statements coded in this study as 'assuring and commending the public' also could not neatly be categorized in the originally proposed frames. These statements were an important feature of the PM's communications, particularly during a rapidly advancing global pandemic. In the absence of 'personal stories', messages of assurance and commendation allowed for display of empathy as well as encouraging sustained action. It is proposed that these two frames, 'public health and medical advice' and 'assuring and commending the public and institutions' be added to Andrade et al. [1] original framework to enable a more thorough analysis of future global health crisis communication.

Another key responsibility leader has during a crisis is to deliver accurate and credible information as this information will be acted on to contain or prevent further damage [20]. This was highlighted in the 'basic information' frame which made up a large segment of all media statements and often related back to 'social context', i.e., how the community could protect themselves and others from the virus when partaking or rather not partaking in social activities. According to the CDC and WHO this information must not only be accurate and credible but also be timely and understandable to ensure the community familiarizes itself with the situation and its progress [11,59]. From this analysis it is noted that this crisis communication criteria was achieved

through journalistic questions surrounding government actions. In all communiques, the least dominant frame was 'personal stories', appearing only four times within the 91 transcripts. The use of storytelling can influence emotions and interpretation of the event and thus can be used as a communication tool to improve community engagement [35]. However, some literature does suggest that personal stories may overrule statistical information and defer factual information. Therefore, leaders must use this frame strategically and honestly so as not to manipulate their audience [13]. Despite PM Morrison omitting personalization of the virus and its effects on the community, the new frame 'assuring and commending the public and institutions' messages provided a reassuring and somewhat positive tone to communiques. In conclusion, from the findings and to answer RQ1 it is clear that PM Morrison provided timely, accurate and clear information surrounding the disease and the necessary response and the burden this placed on social, political and economic activities. It is recommended that leaders in future crises use an open and inclusive approach when framing messages to facilitate community engagement, promote trust and sense making.

4.2. CERC

This study was undertaken during the initial and maintenance stages of the CERC cycle. The initial stage comprises public awareness and involves explaining risks, promoting action, expressing empathy, and describing actions. Lu [31] discusses the importance of this stage during an infectious disease outbreak as it is characterized by the need for urgent information surrounding prevention, self-efficacy and reassurance of government interventions. The maintenance stage follows and continues to explain risks and addresses misinformation [9].

'Actions being taken' was the most dominant theme in the PM's COVID-19 communication and was employed over the course of the study timeframe. It embodied the major principles of CERC, specifically as it provides firsthand, credible information to the public [9]. It was not surprising that 'key messages to the public' followed and disclosed key information to the public in a timely and understandable manner as a fundamental element in safeguarding behaviors that assist in containing and preventing further damage [22]. Transparency and accountability are essential components of CERC and were demonstrated through statements of commitment and reassurance about the government's readiness in response to the pandemic [10]. Furthermore, when topic areas fell outside of the PM's scope, relevant experts and speakers were called in and accompanied the PM's address. A difference was noted in press conferences compared to other communiques as they specifically addressed the public as a partner and used more emotive language. When questions were posed by journalists, answers were met with relative clarity and referral to advisors accompanying the PM. This dialogical approach is in-line with CERC as it promotes partnership with the community and demonstrates elements of credibility [1].

Many leaders and communicators have been trained to maintain confidence and tones of certainty even when uncertain, which can lead to false hope and reduce trust and credibility [54]. The 'what is not known' theme was found in only 36% of transcripts and thus highlights an area which requires attention. Tomkins [54] further analyses the importance of empathetic and honest language during times of crisis and distress by discussing the maternal archetype and how a caring leader can nurture and comfort, whilst one who does not show these traits may trigger feelings of insecurity and judgement. Display of empathy through the expression of compassion and commitment was found in 50% of communiques and was often coded when guest speakers spoke. Empathetic language has been found to help manage anxiety and include the public in the process of understanding, thus highlighting its importance in a crisis [11]. During the COVID-19 pandemic many female leaders have been praised for their empathetic, yet science-backed, decisive communication styles. For example, New Zealand PM Jacinta Arden and German PM Angela Merkel have effectively

communicated and framed messages that acknowledge the public as part of the solution and inherently built confidence [3,5]. The authors note that this effective style of leadership communication is not limited to female leaders but rather encompasses traits of femininity which can be present in all leaders, regardless of sex or gender. Expression of empathy in communication improves the credibility of the sender substantially and the messenger's presumed legitimacy [48].

To answer RQ2, overall, PM Morrison utilized many key areas of CERC in his formal media statements regarding COVID-19. He was successful in reassuring the public of the actions that were being taken, clarified facts often with the assistance of medical experts and was very active in stating his government's commitment to the community. These themes provide overall reassurance, highlight accountability and promote credibility. However, themes which were limited throughout all communiques were, process to obtain answers, where to look for more information, admitting uncertainty and specifically from the PM, expression of empathy. CERC principles are known to engender trust and create a dialogical partnership with governmental bodies and the public, which in turn promotes self-efficacy and ability to build consensus regarding lessons learnt [28]. PM Morrison did not fully achieve this and thus may jeopardize moving to the next stage of the CERC cycle, whereby new understandings of crisis communication can be achieved and used to mitigate disaster in future crises. This study identified transparency and credibility as the most prominent principles of crisis communication delivered by the PM. It is recommended that future crisis communication aims to also include elements of credibility and trust specifically through admitting uncertainty, providing further information and using empathetic language. By incorporating all four principles of crisis communication, leaders can manage anxiety and facilitate the process of understanding.

4.3. Communication over 5-phase response/temporal analysis

Presentation of government communication in Australia in the context of weekly COVID-19 cases, mortalities, five-phase response and policy stringency index demonstrated that different communication methods were employed during different phases of the crisis. Communication evolved from that focused on factual information for the public and assurance of government action toward communication focused on continued government commitments, with a strong focus on political and economic actions. The 'actions being taken' was the main theme throughout all phases which is consistent with the objectives of government communication to continually explain what is being done about the complex situation at hand [38]. The CERC model and other staged models of crisis communication assume crises develop in a somewhat systematic and predictable way; thus, by using a model which anticipates communication needs and emerging audiences, leaders and crisis managers can reduce uncertainty and also foresee future needs [45]. In relation to the findings of the temporal analysis it appears the government was aware of the relative and evolving threat of the virus with implementation of staged policies. It is recognized that not all crises follow the same order, however they are characterized by developmental features and thus it was positive to note that evolution of communication occurred and is encouraged in future crises .

5. Limitations

This study has a few limitations. First, due to the short time period available to complete the study, data collection and analysis was limited to just under four months. As there was a desire to publish timely and relevant information i.e., corresponding to the first wave in Australia, the research in this study solely corresponds to the first wave and thus further research into the second wave, such as that seen in Victoria, should be undertaken to examine potential changes in crisis communication. Despite inclusion of guest speakers, such as state premiers in communiques, overall analysis was limited to PM (federal level)

communication. This meant policy measures and communications by premiers of respective states and territories of Australia and health ministers was not taken into account. Further research will be needed to assess these levels of authority and if states and territories with a high number of cases had increased CERC principles embedded in their communication.

6. Conclusion

Transparent, accurate, trustworthy and timely communication delivered by federal leaders during a crisis are essential principles of CERC. These elements are present in communication techniques such as the use of framing and highlight how linguistic capabilities can guide and influence citizens' behaviors and emotions during uncertain times. This study is the first to analyze the quality and progression of crisis communication delivered by Australian PM Scott Morrison during the COVID-19 pandemic. It has identified the use of framing and alignment to principles of CERC recommended by the WHO and US CDC. PM Morrison used a science-driven and medical-backed approach, with a strong focus on delivering basic information and actions undertaken by his government. Albeit many of the transcripts contained large amounts of information concerning political and economic matters and thus moved away from crucial public health information utilizing compassionate language. Lack of key CERC themes such as, 'expressions of empathy', 'where to look for information' and 'what is not known'along with the frame 'personal stories' were noted and thus may impact and potentially jeopardize efforts of control, recovery, and recuperation. The allocation of new frames, 'public health and medical advice' and 'assuring and commending the public and institutions', allowed for a more thorough analysis of communication during a novel global health pandemic and we suggest that these new frames be incorporated in future research to allow for a wider scope of crisis communication analysis. Finally, the use of staged policies and evolving communication techniques throughout the first wave was a positive finding and is a recommended feature of crisis communication.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijdrr.2021.102375.

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