

Article

A Qualitative Analysis of Older Adults' Cognitive Appraisal in Coping during the COVID-19 Pandemic: The Role of Social Capital

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Abstract: The ability to adaptively cope with the challenges of stressful events such as the COVID-19 pandemic is crucial for healthy aging. One effective coping strategy is social coping in which social networks are tapped for support. However, our review of the current literature on older adults' coping abilities reveals two shortcomings: (1) a lack of consideration of a specific context and (2) an inadequate amount of attention paid to the different types of social networks in the cognitive appraisal process. As coping is a process in which older adults undergo the cognitive appraisal process to identify appropriate coping strategies, the shortcomings result in an incomplete understanding of older adults' coping efforts and impair the development of effective community and intervention programs to improve older adults' well-being. To fill this gap, drawing on the Transactional Model of Stress and Coping and the Social Capital Theory, we conducted 22 interviews with older adults who experienced lockdown measures during COVID-19. Our in-depth qualitative analysis shows the different roles played by bonding and bridging social capital in the cognitive appraisal process and illustrates the influence of a specific context on cognitive appraisals and subsequent coping efforts. Our findings provide significant contributions to theories regarding coping and social capital, as well as practices and policies for improving the well-being of older adults.

Keywords: COVID-19; coping strategies; older adults; pandemic



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1. Introduction

The ability to adaptively cope with adverse life experiences is crucial for healthy aging [1,2]. Growing old increases one's exposure to certain adverse events, including the deaths of friends and/or family members, financial problems, and physical and cognitive decline [3–6]. Furthermore, older adults are at a greater risk of experiencing social isolation and associated health problems [7] and a decreased quality of life [8–11]. Research has identified the detrimental impacts of social isolation and loneliness on older adults, calling for effective community and intervention programs to combat this major health problem [2,12–15]. As such, research has attempted to identify adaptive coping strategies to build resilience and promote well-being among older adults [2,13,14,16].

The COVID-19 pandemic offers a unique context for examining older adults' coping efforts in the face of a prolonged public health crisis, given their vulnerability to the negative health impacts of the pandemic (e.g., high death rates), as reported by various health agencies [17–19]. In addition, the strict lockdown measures imposed in 186 countries during the pandemic, though designed to curb the spread of the virus [20–22], restricted off-line social engagements (e.g., family visits and outdoor social gatherings) [23,24] and resulted in social isolation that negatively affected older adults' sense of social connectedness and psychological well-being [25]. For this reason, extensive research has been conducted to

understand the psychological impact of the pandemic on older adults, including the stress they experienced and their coping strategies [26–31].

To understand the dynamic relationship between stress and coping, researchers often refer to the Transactional Model of Stress and Coping (TMSC) [32–34]. Formally introduced in the 1960s, the TMSC considers *stress* to be the resultant mismatch between a person's perception of external and internal threats and their perception of available resources [33] (p. 199), [34–37]. Cognitive appraisals and resultant coping strategies are considered mediators of stress and stress-related outcomes [38]. As such, this cognitive model recognizes the dynamic and interrelated nature of stress and coping in which coping is the “relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” [33] (p. 21).

The cognitive appraisals inherent in the TMSC occur in two stages: the primary appraisal process for threat detection and the secondary appraisal process for adaptive coping [34,39]. During the primary appraisal process, an individual assesses the degree to which an internal or external event may impact their well-being [33,40]. An event may be viewed as an opportunity to promote—or a threat against—personal health, safety, and growth. During the secondary appraisal process, an individual assesses the degree to which available resources may help them cope with the perceived stressor(s), including physical (e.g., health status), social (e.g., support from friends and family), psychological (e.g., self-esteem), and/or material resources (e.g., money, tools, and equipment) [38]. During the secondary appraisal process, an individual assesses the controllability of a stressor given their available resources [41]. Coping strategies can be understood as methods of controlling the impact or outcome of a perceived stressor [42].

Through this adaptive coping, an individual regulates their emotions and/or manages their relationship with the stressor in a way that meets their perceived contextual needs [38,40]. As such, adaptive coping follows a “goodness of fit” principle that requires ongoing cognitive appraisal to continually respond to one's changing environmental contexts [39,40,43]. In one of their experiments, Folkman and Lazarus [40] found that coping strategies adaptively changed to meet contextual demands as students shifted from problem-focused strategies before an exam (i.e., in preparation for the exam) to emotion-focused coping strategies after the exam (i.e., because the exam has been completed and problem-focused coping no longer serves as an adaptive coping strategy). Later research on coping further supports the importance of context in cognitive appraisals and subsequent coping strategies [34] (p. 20), [36,39,44].

Research on older adults in the context of the COVID-19 pandemic suggests that older adults prefer coping methods that are distinct from those preferred by young people. For example, avoidance coping strategies (e.g., emotional discharge and resigned acceptance) were more prevalent among young adults than older adults [28]. Similarly, a longitudinal survey of 7830 individuals found that young adults were more likely to endorse passive coping (e.g., alcohol consumption), whereas older adults tended to use relaxation strategies (e.g., deep breathing and meditation) to cope with stress [14]. Furthermore, older adults' coping-strategy preferences did not vary by ethnic or racial background [27].

Research indicates that older adults chose a variety of coping strategies during the COVID-19 pandemic. An interview revealed positive (e.g., staying busy, seeking social support, and cultivating a positive mindset) strategies among older adults aged 70–97 years [45]. Other studies found sedentary coping strategies (e.g., watching TV) and active coping strategies, such as home and yard improvement projects that they might not have otherwise engaged in [26]. Furthermore, some older adults relied on social media to connect with friends and family, but the ways in which social media was used had differential impacts on their psychological well-being [14,46–49].

Among a variety of coping strategies chosen by older adults during the COVID-19 pandemic, social coping strategies, seeking support from social networks, were found to be valuable resources for effective coping to combat social isolation during the COVID-19 pandemic [14,26,34,39,46]. However, what remains unclear is the specific context of the

social coping strategies used by older adults in light of the “goodness of fit” principle in the TMSC. According to the TMSC, social resources, or networks, provide three types of support: informational support (i.e., providing information and advice), tangible support (i.e., providing direct assistance, a service, or material goods), and/or emotional support (i.e., providing a sense of security and a feeling of being cared for) [40,50]. However, the specific context of the social coping strategies used by older adults in light of the “goodness of fit” principle in the TMSC remains unclear.

Another theory that has been applied to examine social interactions and relationships is the Social Capital Theory (SCT), which frames social resources as social capital that affords one access to and the mobilization and utilization of social support [51–53]. A central concept of the SCT, social capital denotes the “resources embedded in social networks accessed and used by actors for actions” [53] (p. 25). According to this theory, more socially connected individuals hold more potential resources (e.g., information and assistance of various kinds) at their disposal [51,53–57].

This theory differentiates social networks into bridging social capital (i.e., networks composed of socially distant individuals with heterogeneous backgrounds) and bonding social capital (i.e., networks composed of socially close family members and friends). Bridging social capital is characterized by episodic and infrequent interactions, broad and shallow relationships, and weak social ties [58–61], while bonding social capital features strong and close relationships with frequent and deep interactions. Bridging social capital broadens one’s social horizons and offers opportunities for information or other resources [62], whereas bonding social capital allows individuals to tap into substantial emotional support when needed [58,59,61]. Without bridging social capital, individuals’ exposure to new information and alternative viewpoints is limited; without bonding social capital, individuals, though they are broadly connected, lack deep and strong personal connections [63,64].

Researchers believe social capital is a key factor in older adults’ well-being [63,65–68]. Despite its significance, however, researchers call for a more nuanced understanding of the role of social capital in older adults’ well-being in different contexts [63,65,68]. In particular, the current literature has not yet produced a coherent picture of the role of social capital in the time of a crisis. For example, while bonding social capital becomes stronger and bridging social capital becomes weaker in an economic crisis [69], bridging ties, with the facilitation of online social media, play an critical role in providing needed support during hurricanes [70]. As a matter of fact, studies on natural disasters, such as the 3.11.11 tsunami in Japan, the Kobe Earthquake in 1995, and Hurricane Katrina, indicate that social capital is associated with higher rates of evacuations for the elderly [71–73]. While social capital is negatively associated with depression and loneliness [74–76], the role that each type of social capital plays in older adults’ coping in the context of a crisis like the COVID-19 pandemic remains largely unexplored.

In light of these shortcomings, the current study aims to fill in this gap by drawing on the TMSC and Social Capital Theory. Both theories share the same view of social networks as resources to be utilized during crises. While the TMSC examines social networks as a whole, the Social Capital Theory identifies and discerns the differences between different social networks. Therefore, both theories offer an insightful lens for identifying and conceptualizing the specific role of social capital in older adults’ appraisal in coping with physical and mental health challenges during the COVID-19 pandemic. Accordingly, our research question is, “What is the role of social capital in older adults’ coping with the physical and mental health threats posed by the COVID-19 pandemic?”

2. Research Methodology

Given the exploratory nature of this research, we employed a qualitative, semi-structured interview research method. This method provided a more detailed and nuanced account of cognitive appraisal processes in the context of the global pandemic [26,27,43,45].

3. Background

This research took place in Ontario, which is the most populous province in Canada. On 17 March 2020, the Premier declared a state of emergency [77]. When the emergency order took effect, all non-essential businesses, including bars and restaurants, theaters, schools, and outdoor recreational amenities (e.g., sports fields and playgrounds), were closed [78]. Moving forward, the emergency order would be extended eight times. On 28 September 2020, the province found itself in the second wave of COVID-19 [79], and the stay-at-home order continued until February of the next year [80].

The participants were recruited in 2021 from a prior survey investigating the impact of the COVID-19 pandemic on older adults [46]. The participants were screened for their age (aged 65 or above) and social media experience, with at least one year's worth of experience using social media (e.g., Facebook, Twitter, and email) prior to the survey. Survey participants who reported interest in the interviews were asked to provide their contact information. Sixty-nine older adults were emailed an invitation to participate in the interview. In the email, we explained the purpose of the interview and attached the consent form for the person to review. Each participant was offered a CAD 20 honorarium. Twenty-two individuals signed the informed consent form to participate and were subsequently interviewed. All interviews were conducted remotely and audio recorded. Our research was approved by the university ethics committee. Participation in the interview was completely voluntary. The interview transcripts were coded with randomly assigned subject numbers for confidentiality purposes.

4. Data Collection

In addition to basic demographics (e.g., age, gender, retirement status, and marital status), our interview questions (see the complete list in Appendix A) specifically examined the participants' social lives during the pandemic. For example, "During the COVID-19 pandemic, did you engage in any online social communities?"

As shown in the interviewee profiles (Appendix B), the average age of the participants was close to 73. Seventeen participants were retired, two were semi-retired, and one was still working. Thirteen participants were female, and seven were males. All had at least 5 years of experience using social media and were familiar with social media applications such as Facebook, WhatsApp, Twitter, Myspace, and/or Zoom.

General Approach to Data Analysis

The collected data were analyzed using a thematic analysis (TA), which is a widely used method of "identifying, analyzing, and interpreting patterns of meaning ('themes') within qualitative data" [81] (p. 297). The TA is known for its flexibility, which means that it can be applied across a range of theoretical frameworks, research questions, and sizes of data sets and can accommodate both inductive and deductive analyses [82–85]. TAs were found to be the most suitable for exploring individual experiences and perspectives [86] and are extensively used in the context of health research [85].

We followed the six-phase approach to our thematic analysis [83]. In the first phase, one of the researchers read through the interview transcripts multiple times to become familiar with the data. An initial memo of the data was created. In the second phase, the same researcher generated initial codes (i.e., a code book) that were relevant to the research question and created a label and a definition for each code. In the third phase, four research assistants (RAs) were recruited to code the complete data set. They were first briefed on the code book, and then all coders first coded the same two interviews to establish inter-rater reliability using an intraclass correlation (ICC). The dependent variable was the number of times a particular code occurred in each interview. ICC estimates and their 95% confidence intervals were calculated using SPSS statistical package version 28 (SPSS Inc., Chicago, IL, USA), based on a mean-rating ($k = 4$), absolute-agreement, two-way mixed-effects model. An excellent degree of reliability was found between the coders' ratings. The average measure of the ICC was 0.998, with a 95% confidence interval ranging

from 0.997 to 0.998 ($F(75,225) = 418.406, p < 0.001$) [87]. The coders were then split into two groups, each assessing 10 interviews.

Due to our focus on social coping during the COVID-19 pandemic, we identified older adults' online and off-line social activities, grouped them based on the type of social network, and organized these activities based on the situation in which the activities took place. For example, one interviewee mentioned visiting a friend during the COVID-19 lockdown. For this activity, we identified the context in which the activity took place. Some interviewees also described their face-to-face gatherings, for which we noted the context (e.g., with whom the gatherings took place; how their health and safety concerns were taken into consideration in those gatherings). In the fourth phase, we closely examined the interconnections between activities and commonalities among the situations. As a result of the analysis, some situations were refined, some collapsed, and differences between the situations became clearer. For example, in-person visits were grouped together because the people being visited belonged to the same type of social network. However, a close examination of the visits indicated that some occurred more often than others. This led to two situations: situation #1, in which family and friends gathered together from time to time, and situation #2, in which people performed favored activities on a daily basis. This distinction helped to deepen our understanding of each situation and sharpened the identification of salient control variable(s). The fifth phase involved defining and labeling each situation and was followed by the sixth phase, which involved describing the findings.

5. Findings

5.1. Primary Appraisal

According to the TMSC, at the primary appraisal stage, an individual answers the key question, "How does this impact me"? The interview data generally showed that older adults acknowledged the fatal nature of the COVID-19 virus and were very conscious about social distancing, as reflected in the following quotes.

There are some people who are just very physical people. So when you're talking to them, they're reaching over and brushing something off your shoulder or grabbing your hand and pointing at something. And that sort of in person, obviously, can not be replicated.—Interviewee #8

And I have tried to follow the recommendations for safety and security where possible. I'm amazed at how many people I see outside not taking care of masks, social distancing, and so on. So I do pay attention to what the government says.—Interviewee #37

However, older adults seemed to feel that their well-being was more impacted by the lockdown measures than the virus, as demonstrated in the following quotes.

The thing that has bothered me about lockdown is the lack of ability to choose to do something. Should I choose to go out and eat in a restaurant? I can't. . . . I talked to my friends in person or over the phone or through email; we exchanged information. We've done a little less of it during lockdown, because we haven't been able to, you know, have coffee together and talk for two hours.—Participant #16

Endangered by the virus? No, I've been more impacted by the restrictions imposed by governments.—Interviewee #09

The COVID-19 pandemic took a toll on older adults. A 75-year-old woman shared her struggle:

It's just very difficult balance between keeping yourself safe physically and keeping yourself healthy mentally.—Interviewee #31

Summary

Our research participants indicated their awareness of the deadly nature of the virus and their vulnerability to it. However, lockdown measures during the pandemic were often perceived as more stressful and detrimental to their well-being. Taken together, the primary appraisal responses showed that while older adults felt threatened by the virus, they were even more significantly challenged by lockdown measures.

5.2. Secondary Appraisal

According to the TMSC, at the secondary appraisal stage, an individual identifies coping strategies. As shown in the primary appraisal phase, the older adults' regular social activities and their physical and mental well-being were negatively impacted both by the virus and the lockdown. So, the secondary appraisal phase reflects coping responses to, "What can I do about the virus and the COVID-19 lockdown?"

The interview data showed that the coping responses varied from one situation to another. Given our focus on social support, we focused on situations presenting unique contexts that called for distinct cognitive appraisal processes. Three situations emerged as a result.

5.2.1. Situation #1—Family/Friend Connection

During the lockdowns, the older adults faced tough situations pertaining to family/friends who needed help. One interviewee, despite the lockdown measures, chose to meet his mother face to face because his mother had Alzheimer's disease and he was afraid that he would lose her soon.

With my mother, I cannot [go online] you know. She doesn't know anything about a computer. So, with my mother, it's always face to face.—Interviewee #12

Another interviewee described an old friend who needed help very badly.

My friend, who is the mother of these kids. Her partner just died of an aneurysm in September. You know, the conversations were kind of heavy with her. Very hard. I actually went down there in December even though I wasn't supposed to because she was just hysterical. She was in the room with him when he died.—Interviewee #31

Another interviewee, who was retired, lived alone by himself. He recounted a strong need for a family reunion during the lockdown.

And that's occurring also in a couple of other areas where we plan socially distanced meetings in person. And have been doing that for a while now.—Interviewee #9

A 76-year-old woman recounted taking on whatever measures necessary to see family members across the border.

I'm going to be doing a helicopter to cross the border, and get—they have a flatbed truck service, which takes your car—and we're going to see family in August. And we will do whatever has to be done. The testing, and the—we've done the vaccinating—and we'll quarantine if it is still in Vogue at that time.—Interviewee #28

As our interviewees indicated, most of the older adults took precautions in their family/friend gatherings; they selected open areas (e.g., a backyard), people kept their distance from one another, and the legally allowed maximum number of people at a gathering was closely followed.

We did have meetings in the backyard over a distance from time to time, but certainly not as often as would be previously. When things were, even with my children you know, we would see each other at a distance.—Interviewee #25

We can plan a Christmas, one of my tea groups. We're having Christmas in July socially. . . . So, we are socially distanced in someone's backyard. Bring your own chair.—Interviewee #09

Other friends locally will occasionally email, and then occasionally still [meet] in person that is carefully distanced out in the backyard. The legally allowed number of people varied during the lockdown.—Interviewee #27

I walked with friends, especially in the last two months. . . . In the fall, we were able to—we went down [to] Niagara a couple of times and had a patio, you know, dinner with friends at a winery. Them sitting, you know, at the next table. I mean, it wasn't really isolated. Believe me. But yeah, we were able to do that. We had a lot last summer.—Interviewee #28

5.2.2. Situation #2—Disrupted Routines

The older adults expressed a strong desire to maintain routines that they had already established before the pandemic. Since most of the prior routines were in-person, the older adults were stressed that the lockdown disrupted their routines. In coping with the situation, one resource that the older adults tapped into was their social network, whether in-person or online.

One interviewee, a retired woman who lived alone, continued writing to her writing pal during the lockdown.

When I'm in a mood to write, my writing friend and I will exchange what we've written and comment on it. One of the great pleasures of my life is to have her in my life.—Interviewee #35

Interviewee #29, a 70-year-old woman who lived by herself, carefully went back to her routine with her walking friend and a book buddy.

I have a walking friend who lives in this building. And we go out with our masks on, around the lake, watching everybody else having their interactions. But other than that, we don't go to each other's place and sit and have tea or anything like that. And I have a friend that I exchanged books with. So, I would meet with her at some place, and we would exchange our books and sometimes go for a walk or whatever, masked.—Interviewee #29

Other interviewees spoke of maintaining existing friendships and routines but shifting communication from in person to more remote methods: I talked to my friends in person or over the phone or through email, we exchanged information. We've done a little less of it during lockdown. Because we haven't been able to, you know, have coffee together and talk for two hours. But we've done the same things.—Interviewee #16

However, not all the routines took place within an inner social circle. Our interviews showed that older adults maintained their interactions with their casual social networks as well. For example, an older adult resumed her Pilates classes with the existing studio and the instructors from whom she took classes before the pandemic.

I was already going to the Pilates studio. And then there were no classes, of course, when the lockdown started. Then the studio started doing them online, so I do regular classes a week. 5 classes a week with some of the instructors I already knew from the studio.—Interviewee #38

Another interviewee also resumed group meetings in which she had a chance to get to know some of the people in the group.

I'm sure it's not the same talking on Zoom as it is talking in person. But we do regularly meet on Zoom just to see how everybody's doing and so on. But because then you get a group together. . . . When we're on Zoom, there are 7 of us that meet regularly. And so you get everybody's story, which is always fun.

Right. It [her social network] certainly hasn't grown, except there are a couple of people that I've gotten to know better.—Interviewee #35

At the age of 82, another interviewee lived with his wife. He continued his role as a committee chair and hosted regular meetings online.

There are weekly meetings, which I participate in. I'm a committee chair at senior college.—Participant #37

5.2.3. Situation #3—Opportunities for New Social Activities

In this situation, the older adults faced opportunities to attempt something new. Due to the restrictions on in-person activities, many of these opportunities took place online. As one 66-year-old female interviewee stated:

... there are also people or events that wouldn't even be happening online if it wasn't for COVID. So I have managed to take advantage of things being online that I wouldn't be.—Interviewee #8

Our data also suggest that the older adults embraced online exploration from within their existing social networks. One interviewee, a 67-year-old man who lived with his partner, joined a virtual church choir which provided them an opportunity to participate in group singing activities.

We [the couple] joined a virtual church choir. And so that took up an awful lot of time because you've got to practice. Yeah, you go to a choir practice and you've got to practice on your own. And then you had to tape your singing, so you'd be listening to the music and then you would tape in front of Google Meet, a Google program, and then upload it to the church directory and the choir director put together the performance. ... So we did that almost every week.—Participant #32

At the age of 79, another interviewee was retired and lived by herself. She went online to attend sessions on arthritis.

My arthritis doctor recommended that I get in touch with the Arthritis Society and they have zoom presentations.—Interviewee #6

Another 71-year-old woman expressed a deepened interest in engaging others through online games during the pandemic:

I play a game called words with friends you know. It's like a scrapbook game. Well, I've got about 9 clients now. So I'm on there too often playing this game because I'm addicted to it.—Interviewee #12

6. Data Analysis

As the older adults were the most vulnerable to the COVID-19 virus, it was understandable that they were concerned with their health and safety. When complete self-isolation was not an option, the older adults had to appraise different situations to protect themselves while satisfying their social needs. We drew on the TMSC and Social Capital Theory to analyze the cognitive appraisal processes for each situation.

6.1. Situation #1—Connection with Friends/Family

In this situation, the older adults faced the highest risk to their health and safety when it came to meeting in person with others. Our data show that all the in-person meetings took place with the older adults' friends and/or family members. According to the Social Capital Theory, bonding capital is defined by social networks composed of friends and family members. It seems that stronger bonding increased the older adults' yearning for get-togethers with family and/or friends.

Implicit in this bond is the mutual trust among members in a social network. In other words, the older adults trusted that the other members in their social networks would care for the well-being of each other and would do what was necessary to protect themselves

(which included complying with government measures). Our data indicate that the older adults worked out details with their friends and family members such as where to meet (e.g., indoors or outdoors), and how best to protect themselves and others (e.g., by wearing a mask). This gave the older adults a sense of control in that their health and safety would not be in danger when going out for in-person gatherings. The following quote supports our analysis:

We were cautious. So we looked at who we interacted with, who was in our very small circle. . . We were very cautious of who we chose to be in our circle. And we maintained that since March of 2020. We had a very core group of people that we would allow in. And if we saw that any of those people were starting to get a little iffy, well, they were no longer in our core group.—Interviewee #32

As a result, meeting in person was deemed a reasonable coping strategy when interacting with social networks composed of friends and family members. Figure 1 captures this cognitive appraisal process.

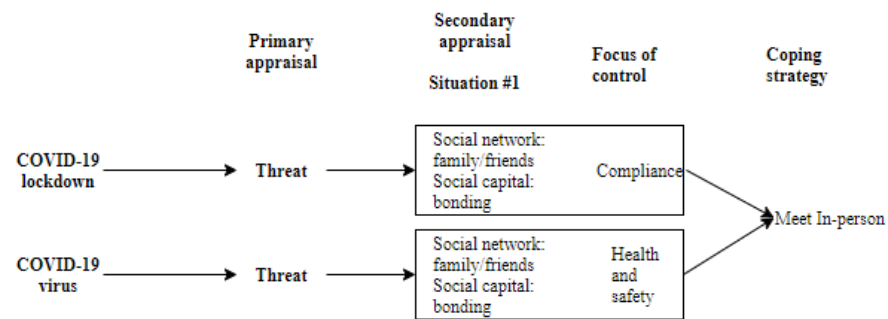


Figure 1. Cognitive appraisal process for situation 1 (bonding capital).

6.2. Situation #2—Disrupted Routines

Unlike gatherings of family/friends (situation #1), which took place occasionally due to COVID-19 restrictions, routines occur more regularly. When it comes to routines, we discovered that older adults tapped into not only their friends and family members but also people in their casual networks. However, we discerned differences in the underlying cognitive appraisal process.

Activities within social networks with bonding capital involved a small number of individuals and focused on bond building. For example, interviewee #35 resumed the writing routine she shared with her writing pal; interviewee #29 went back to her walking and reading routine with only one walking partner and one reading friend, respectively. We reason that this choice was intentional and made based on trust in individuals with whom they could comfortably share their thoughts and ideas. Due to having already established trust amongst themselves, they believed that their regular in-person interactions were safe for their health. This cognitive appraisal process is captured in Figure 2.

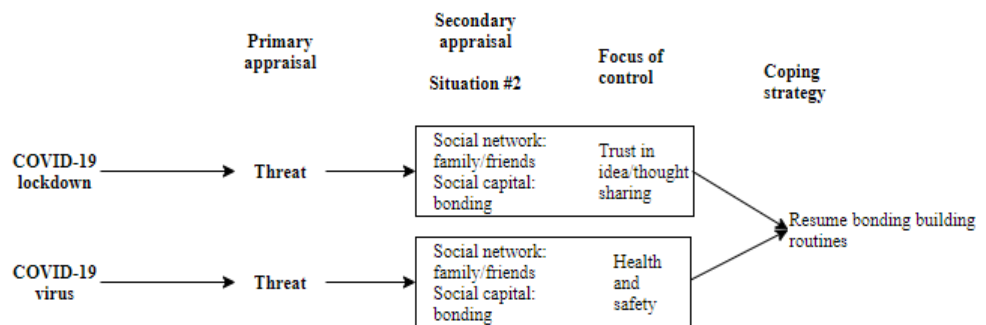


Figure 2. Cognitive appraisal process for situation 2 (bonding social capital).

In contrast to routines with family/friends, routines that took place within casual networks involved much larger groups and could be for recreational purposes or for community services. For example, interviewee #38 resumed Pilates lessons with their Pilates studio, and interviewee #37 went back to his duties as the chair of a college committee. We reason that this deliberate choice was affected by familiarity—they were familiar with the way that things were conducted, they were consequently confident that the activities would be performed as they had been before the pandemic. As a result of familiarity, the older adults felt assured that they could quickly go back to where they had left off with their existing social networks. Note that their regular interactions with people in their casual networks instead took place online, thus mitigating the risk of potential COVID-19 infections. This cognitive appraisal process is captured in Figure 3.

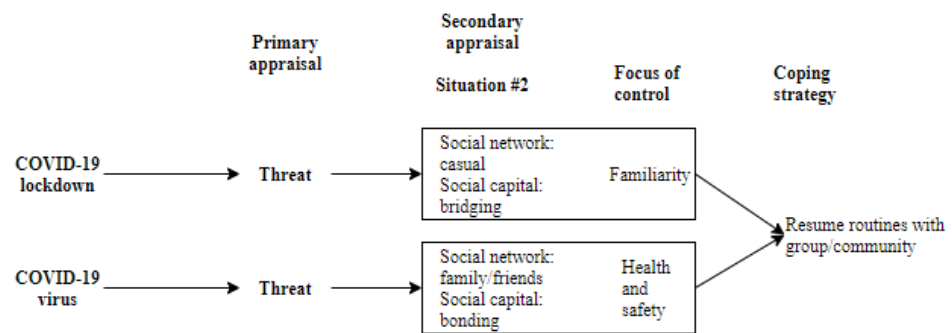


Figure 3. Cognitive appraisal process for situation 2 (bridging social capital).

6.3. Situation #3—New Online Activities

Unlike the previous two situations, this situation concerned older adults performing new activities via online platforms. While socializing online could mitigate the adverse effects of the lockdown and alleviate concerns for infection, it also required older adults to acquire new skills, experience new processes, and use unfamiliar technologies.

We found that in this situation, the older adults relied on support from their existing social networks. For example, interviewee #32 explored a virtual choir with his wife, and interviewee #6 attended Zoom education sessions at the recommendation of his specialist. Having someone close together in learning new things and receiving recommendations from a trusted expert, assured the older adults of a safe and secure experience. The role of support from existing social networks applies to the cognitive appraisal process for both bonding and bridging capital. Accordingly, we developed the following diagram to capture the cognitive appraisal process. This cognitive appraisal process is depicted in Figure 4.

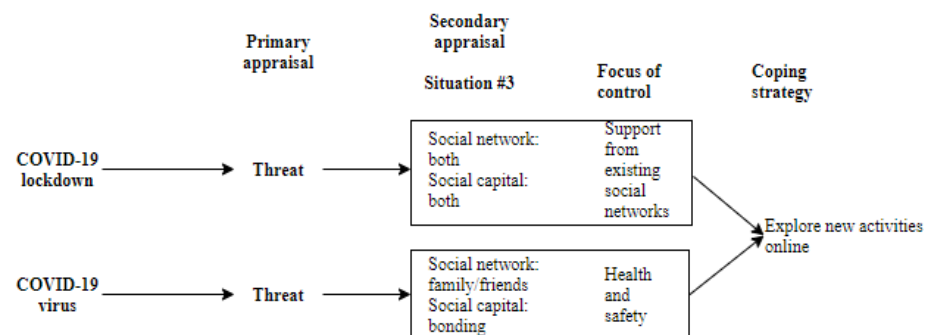


Figure 4. Cognitive appraisal process for situation 3 (bonding and bridging capital).

7. Discussion

The COVID-19 pandemic was and continues to be a public health crisis that endangers the physical and psychological well-being of older adults across the globe. While a wealth of studies on the coping strategies adopted by older adults during the pandemic were

conducted, the existing literature lacks an in-depth investigation into the cognitive appraisal processes preceding their adoption and the context in which they took place. Given this gap in the literature, we conducted 22 semi-structured interviews with older adults from Ontario in March 2021 who had experienced lockdown measures in response to the COVID-19 pandemic. With the qualitative data collected, we analyzed cognitive appraisal processes in response to the impact of the pandemic and lockdown measures and the older adults' coping efforts, as well as the contextual factors that influenced these processes. Our findings provided four key insights which will be elaborated below.

First, our study offers insights into older adults' cognitive appraisal processes and the coping efforts they adopted during the COVID-19 pandemic. In particular, our data analysis reveals that in the cognitive appraisal process, the older adults faced multiple threats. By illustrating the appraisal process for these threats, our research illustrates the benefits of examining a specific context when investigating coping efforts. Despite common perceptions that older adults were primarily concerned about the physical threat posed by the virus, e.g., [13,14,28], our interviews indicate that the older adults were even more concerned about the psychological threat posed by lockdown. As the outcome of the primary appraisal process affects the secondary appraisal process, identifying the threat(s) older adults faced during the pandemic was critical. Since our interviewees found that the virus and subsequent lockdown dynamically created a stressful environment that affected their physical and psychological well-being, their coping efforts were therefore aimed at both threats. Therefore, by identifying different threats that the older adults faced while coping during the pandemic and discerning how each threat impacted the secondary appraisal process, our study enriches the understanding of older adults' cognitive appraisal processes and resultant coping efforts during a public health crisis such as the COVID-19 pandemic.

Second, our study not only offers empirical support for the importance of controllability in the cognitive appraisal process [38,41] but also reveals how different levels of control impacted the older adults' coping efforts during the COVID-19 pandemic. In particular, while health and safety were the main focus of control when evaluating the threat of the virus, there were four foci of control when the lockdown measures were the focus of the threat appraisal: compliance, trust in idea/thought sharing, familiarity, and support from existing social networks. This finding further demonstrates the benefits of taking into consideration a specific context when examining coping efforts. Future research could further investigate these control factors and examine their interplay with the different types of social networks.

Third, drawing on the TMSC and Social Capital Theory, our study highlights the importance of the role of social networks in the cognitive appraisal process, thus illustrating the value of applying the two theoretical models when studying coping among older adults. The older adults employed different cognitive appraisal processes for different types of social networks, and they adopted different coping strategies. In addition, our data support the value of the "goodness of fit" pattern. Our study reveals how these distinct social networks, as defined by the Social Capital Theory, may have contextual significance during the older adults' cognitive appraisal processes. For example, the need for social connections would sometimes outweigh concerns for physical health and safety among older adults. When they themselves or loved ones were in need, the older adults tended to choose creative in-person interactions that were adapted to the specific contextual threats of the virus (e.g., meeting outdoors and wearing face masks). In contrast, online interactions were chosen for interactions with people in their casual networks. By focusing on how the different types of social networks impacted the cognitive appraisal process, our findings reveal that social networks should be considered in future research when investigating older adults' coping strategies during stressful events. Longitudinal studies could also be conducted to examine the interplay between changing social networks and adaptive coping to offer more insights into a "goodness for fit" pattern in times of crises.

Fourth, by drawing from both the TMSC and Social Capital Theory, our research offers a rich understanding of the relationship between the two different types of social

capital in times of crises, which has not yet been closely examined. In particular, bonding capital played a key role in frequent social interactions during the COVID-19 pandemic. As illustrated, the older adults offered various types of support (e.g., visiting friends in need) to, and connected at a deep level with, the people in their inner circles. In addition, our study reveals that growing bridging capital was influenced by bonding capital, which served as a resource (e.g., personal support and personal recommendations) from which older adults expanded their casual social networks. By revealing the relationships between the two types of social capital and illustrating the critical role of bonding social capital, our findings shed light on the impact of bonding and bridging social capital during crises. The interrelationship between the two types of social capital should be further explored, especially in the context of a crisis in which older adults are at risk.

Despite this, our findings should be interpreted considering two limitations. First, the findings from our study may not be generalizable to all older adults. Our sample included 22 participants: seven in their 60s, ten in their 70s, and two in their 80s. Overall, the participants were evenly distributed between those with partners and those who lived alone. However, it should be recognized that our interviewees were mostly female and had easy access to technology. While accessing technology can act as a resource in the cognitive appraisal process, as illustrated in our study, the role of gender has not been adequately examined. To what extent female older adults differ from male older adults in the cognitive appraisal process remains unclear. Future research should explore the potential role of gender in cognitive appraisal processes, as defined by the TMSC.

Second, as previously mentioned, our research took place over one year after the first lockdown. As such, the perceived threats and coping strategies of our sample may not be representative of all the phases of the COVID-19 pandemic. Given the significance of context, as described in the TMSC, the results from this study would likely have been different had the interviews been conducted in the spring of 2020. That being said, while age inevitably affects memory and cognition, our research participants were reportedly healthy and able to produce detailed recollections surrounding their early pandemic experiences. Most importantly, voluminous retrospective studies have been conducted using similar interview methods [26,27,43,45], producing insightful findings on the coping and well-being of older adults.

8. Practical Implications

Our study bears significance to policy makers and health professionals for protecting older adults in a crisis such as the COVID-19 pandemic. First, our research highlights the importance of obtaining a comprehensive understanding of the stressful events faced by older adults during a public crisis, as these events may reciprocally influence each other. Our study vividly illustrates that older adults' coping processes took into consideration both threats, including the COVID-19 virus itself and the lockdown measures. Policies that focus exclusively on one threat (e.g., the virus) while ignoring others (e.g., social isolation) may not adequately protect this vulnerable population. As our study suggests, ignoring the interconnectedness of individual stressful events, especially in the context of social isolation, may detrimentally affect older adults' physiological and psychological well-being [12]. Policy makers should be mindful of the differential ways in which social networks can provide effective coping methods for this population.

Second, our research findings shed light on the roles of different types of social networks in the cognitive appraisal process and resultant coping efforts. Understanding the roles of social networks could help inform healthcare practices that promote empirically supported coping strategies for older adults undergoing prolonged stress. Researchers have long established the critical role of social connections in healthy aging and coping during crisis situations [16,43,63,66,74]. By gaining a good understanding of each of the different social networks to which an older adult is connected, health practitioners could recommend health-promoting coping strategies, such as engaging in social activities or hobbies (i.e., seeking out bridging social networks) or obtaining help from a close friend

with whom the older adult can share their innermost thoughts and feelings (i.e., seeking bonding social networks). Community programs could also be developed to help older adults grow casual social networks in their neighborhood [16]. Research has continued to demonstrate the detrimental impacts of social isolation and loneliness on the health and well-being of older adults [7,12,15,25]. Findings from this study may help inform targeted interventions that promote social connection using a “goodness of fit” model.

9. Conclusions

Coping with adverse life experiences is crucial to healthy aging and is especially important during public health crises such as the COVID-19 pandemic. Despite useful findings on coping strategies endorsed by older adults during the pandemic, the current literature has not yet adequately differentiated the roles of different types of social networks in older adults’ coping efforts. Drawing on the Transaction Model of Stress and Coping and Social Capital Theory, our study fills this gap through an exploratory qualitative analysis of 22 interviews with older adults who experienced lockdown in the early stages of the pandemic. The insights gained from our in-depth analysis offer significant theoretical contributions to the TMSC and Social Capital Theory and practical implications for healthcare professionals and policy makers alike.

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Appendix A

Interview Questions

1. Basic demographics (e.g., age, gender, retirement status, marital status, living conditions)
2. During the COVID-19 lockdown, did you engage in online social communities (e.g., interest group)?
3. Did you connect with your family and friends during the lockdown?
4. Has your social circle changed as a result of the lockdown? How so?
5. During the lockdown, what news/information attracted most of your attention? Please give us a couple of examples
6. Were you satisfied with your social engagement (including online using social media and using phone) during the lockdown? In what aspect were you benefited from the social engagements?
7. Did you have any non-virtual social interactions during the lockdown? In what aspect were you benefited from the social engagements?

8. To what extent did you believe people living around you were trustworthy during the lockdown? Please explain your answer
9. Describe the support you received from your local community. On the scale of 1–10 (1 worst, and 10 the best) rate their support during the lockdown

To what extent did you believe doctors, nurses, and healthcare workers in your neighborhood were trustworthy? Please explain your answer.

Appendix B

Interviewee Profiles

ID	Age	Gender	Retirement Status	Marital Status	Living Conditions
#3	73	Female	Working part-time (Inferred from context—not directly answered)	Married	Lives with husband
#4	68	Female	Retired	Single	Lives alone
#6	79	Female	Retired	Single (Inferred from context—not directly answered)	Lives alone
#8	66	Female	Retired	Single	Lives alone
#9	71	Male	Retired	Single	Lives alone
#10	69	Female	Retired	Married	Lives with husband
#11	69	Female	Not Retired/Working	Divorced	Lives alone
#12	71	Female	Retired	Common Law	Lives with spouse
#14	70	Female	Retired	Divorced	Lives alone
#16	Not specified	Female	Retired	Married	Lives with husband
#22	69	Male	Retired	Married	Lives with wife
#24	77	Female	Retired	Divorced	Lives alone
#25	72	Male	Retired	Married	Lives with wife
#27	69	Male	Semi-Retired	Married	Lives with wife
#28	76	Female	Retired	Married	Lives with husband
#29	70	Female	Retired	Separated	Lives alone
#30	74	Male	Semi-Retired	With partner	Lives with partner
#31	75	Female	Retired	Divorced	Shares duplex with sister
#32	67	Male	Retired	With partner	Lives with partner
#35	89	Female	Retired	Single (Inferred from context—not directly answered)	Lives alone
#37	82	Male	Retired	Married	Lives with wife
#38	77	Female	Retired	Widow	Lives alone

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