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Micro, mezzo, and macro factors associated with coping in the early phase of COVID-19

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ABSTRACT

Coping and adapting to crisis can be influenced by numerous factors on multiple levels. The experience during the beginning of the COVID-19 pandemic is no different. This article reports on the results of a cross-sectional, online survey administered to adults living in the United States and Canada in June 2020 (N = 1,405). Hierarchical multiple regression analysis found that respondent's age, support of family and friends, support of children's school, use of alcohol and substances, level of trust/satisfaction with national government, being overwhelmed by the amount of COVID-related information, and level of life disruption accounted for 12% of the variance for level of self-reported coping. This study did not find that race or gender impacted self-reported coping. Discussion and implications at the micro, mezzo and macro levels are offered.

The COVID-19 pandemic caused serious repercussions to everyday life that were widely experienced worldwide. In addition to significant personal concerns for contracting the virus, changes to everyday life, including social distancing and general life disruption, were and are considerable. The inclination and ability to follow some of the recommended preventative practices most likely impacted individuals' level of coping and adaptation to the pandemic.

Micro, macro, and mezzo factors have been previously explored for their impact on trauma, war, poverty, and natural disasters. Pandemics can have similar consequences as war, poverty, and natural disasters (Galea et al., 2020; McLaren et al., 2020). It is important to explore coping experienced during crisis and identify any differential coping experienced by groups in order to successfully intervene. Micro factors include age, race/ethnicity, gender, and religion. Macro factors include social support, community, and work. Mezzo factors include policy, national leadership, and provision of services.

Past disasters have exacerbated gender inequality. New roles assumed by women during disaster events usually come without the alleviation of their existing responsibilities (McLaren et al., 2020). The 1997 Red River Valley flood in North Dakota and Manitoba displayed the domestic and communal responsibilities for women when they helped out as emergency responders in professional positions (Enarson & Scanlon, 1999). Hurricane Katrina, in 2005, exposed additional challenges women face during environmental

catastrophes; women took on the burden of domestic duties, and childcare, including entertaining the children and providing emotional support (Peek & Fothergill, 2008).

Thus far, societal responses to COVID-19 have similarly magnified gender inequities. Women have been found to have an increased burden of women in frontline fields, while providing unpaid care activities, and high levels of responsibility for community activities in the early stages of COVID-19 (McLaren et al., 2020). Additionally, during the COVID-19 pandemic, communities faced the added burden of school closures for several months, which undoubtedly increased the burden on families for childcare and work, particularly women. During this unprecedented closure, the amount that schools at the mezzo level can continue to provide support, even remotely, may help families be able to cope and ensure continuity for their children.

In additional to gender disparities, natural disasters in the United States, in particular, have been found to impact communities of color more severely. Areas largely impacted by Hurricane Katrina were disproportionately populated by African-American and Latinx communities, as communities of color made up almost 80% of the flooded neighborhoods (Allen, 2007; Matthew, 2006). African-American survivors of Hurricane Ike, in 2008, were more likely to suffer post-disaster PTSD and depression than White and Latino survivors (Davidson et al., 2013).

There is a known adverse relationship between substance and alcohol use and adverse coping (Lagisetty et al., 2017; Ornell et al., 2020; Schulte & Hser, 2014). It is known that natural disasters often increase substance use disorders (Galea et al., 2020), as does exposure to trauma (Berenz et al., 2016; Hansen et al., 2020; North et al., 2002; Read et al., 2014; Sheerin et al., 2016; Williams et al., 2015). As substance use has been noticed to be increasing during the COVID-19 pandemic (Ornell et al., 2020), it is important to explore the relationship with coping in the general population.

In response to the negative ramifications of widespread crises, unique ways of coping and adaptation are experienced. Skill sets and traits needed to cope and be resilient, such as soft skills and applications of emotional intelligence may help people cope during such disasters (Naamati Scheinder et al., 2020). Adult survivors with PTSD of a Nepal earthquake used active coping, followed by social coping as well as religious coping (Baral & Bhagawati, 2019). Adolescents with PTSD who survived an earthquake in China displayed internality, locus of control, and problem-solving as resilient factors (Zhang et al., 2014). Firefighters who survived the Oklahoma City bombing adjusted well, with 50% stating that they turned to friends or relatives after the event (North et al., 2002). After the 2004 Asian Tsunami, survivors utilized extended social networks, religious faith, and cultural traditions to help with emotional well-being (Ekanayake et al., 2013). Residents who lived 30 to 100 feet away from a train collision in 1996 in Stafford, UK described distancing coping strategy, self-controlling coping strategy, and seeking social support as most commonly used (Chung et al., 2001). Another study showed that family support was the only statistically significant result associated with lower trauma symptoms for survivors of the 2010 earthquake in Haiti (Smith et al., 2014). Additionally, the advent of social media has also created a new

exploration of resiliency through this medium (Jurgens & Helsloot, 2018), which may have continued through the COVID-19 pandemic.

The micro, mezzo, and macro levels can potentially impact individuals in both positive or negative ways. However, they have not been explored in depth with respect to pandemics. The COVID-19 pandemic is unique from these other types of disasters as it caused people to be isolated and socially distant. The purpose of this study was to examine behavioral adaptation and general coping to the COVID-19 pandemic by adults in the USA and Canada. More specifically, this study seeks to identify micro, mezzo, and macro factors that impacted coping, including gender, race, sources of social support, and specific area of challenges.

Methods

This study involved an anonymous, cross-sectional survey administered online through Qualtrics Survey Software. Institutional Review Board approval was secured prior to survey distribution. Data were collected in June 2020 and targeted adults living in Canada and the United States (US). Informed consent was provided in the introduction of the survey, and completion of the survey was considered consent for participation. Survey completion took about 10 min or less.

Participants were recruited through convenience and snowball sampling, utilizing researchers' personal contacts, social media, and personal and professional networks. There were additional efforts made to reach underrepresented populations and geographic areas in the initial stages of data collection. The research team identified personally known contacts from those communities, and personalized communication in an effort to encourage them to participate and to share the survey.

The survey consisted of 30 researcher-constructed individual items, each measured on a six-point Likert-type scale. Each item asked respondents to indicate their level of agreement to statements concerning the COVID-19 outbreak (1 = *strongly disagree*, 6 = *strongly agree*), such as "I am satisfied with our national leadership's response during this COVID-19 outbreak", "My child's school provided support to me during the COVID-19 outbreak", and "I experienced challenges related to medical care during the COVID-19 outbreak". The dependent variable was the response to "I adapted to/coped with the COVID-19 outbreak very well".

Respondents were also asked to provide various demographic including age, gender identity, race and ethnicity, political ideology identification, educational attainment, number of children living in the home, age categories of children living in the home, number of adults living in the home, state/province, and their geographic setting.

Results

A total of 1,405 people from Canada and the United States responded to this survey. Representation from all 50 states, the District of Columbia, and English-speaking Canada (all ten provinces except Quebec) was obtained. The vast majority of the sample identified as female (82.6%), and White (77.9%). The largest groups of the sample identified as having moderately liberal political views (40.2%), and having a Master's degree as their highest level of education (33.3%). The average number of children of respondents was 1.68 (sd = 1.68),

and the average age of respondents was 43.04 (sd = 24.09). Table 1 displays the full demographics of the sample.

The dependent variable used in the study was the level of agreement to the statement "I adapted to/coped with the COVID-19 outbreak very well," which was measured on a six-point Likert scale, with a higher number indicating a higher level of agreement. Bivariate analyses of the coping variable were conducted across all study variables.

At the bivariate level, significant differences in the level of self-reported coping were found for those who identified as Asian ($\bar{x}$ =4.80 sd =1.344), as compared to those who have not identified as Asian ($\bar{x}$ = 4.33 sd = 1.366), t (1320) = −2.144 p <.05. Significant differences were also found between those who identified as Black or African American ($\bar{x}$= 3.96 sd = 1.684) as compared to those who did not identify as Black or African American ($\bar{x}$ = 4.38 sd = 1.327), t (132.881) = 2.668 p < .01. No significant differences in self-reported coping were found between those who self-identified as American Indian, Hispanic, Middle Eastern, White, or Multiracial, and those who did not share those identities.

There were significant differences in self-reported coping for those who have identified as having a Democratic governor ($\bar{x}$= 4.26, sd = 1.405) and those who have identified as having a Republican governor ($\bar{x}$= 4.48 sd = 1.253 t (584.627) = −2.549 p < .05). There were no significant differences in self-reported coping between those having children, relative to those who do not have children. T-tests also determined that there were no significant

Table 1. Demographics of the sample.

Demographic	N	Mean (sd)/%
Age		43.04 (24.09)
Number of children		1.68
		(.97)
Gender identity		
Female	1154	82.6
Male	227	16.2
Other	17	1.21
Race/ethnicity*		
American Indian/First Nations	11	0.8
Asian	41	2.8
Black or African-American	128	8.7
Hispanic, Latino or Spanish origin	97	6.6
Middle Eastern or North African	17	1.7
Native Hawaiian of other Pacific Islander	6	0.4
White	1138	77.9
Other	27	1.8
Education		
Less than HS diploma	1	0.1
HS diploma or GED	316	22.6
Associate's degree	100	7.2
Bachelor's degree	320	22.9
Master's degree	466	33.3
Doctoral degree or PhD	195	14.0
Political views		
Extremely conservative	27	2.0
Moderately conservative	159	11.6
Neither conservative or liberal	323	23.4
Moderately liberal	555	40.2
Extremely liberal	317	23.0

* more than one option could be selected

differences in self-reported coping for individuals who identify as Cisgender, as opposed to those who identify as trans-male or trans-female. T-tests identified no significant differences in self-reported coping with the COVID-19 pandemic based on urbanicity category (i.e., urban, suburban, and rural).

Correlation analysis found significant positive and negative relationships between self-reported coping, and many other likert-type items (See Table 2).

A six-stage, hierarchical multiple multi-variate regression model was built both theoretically on the existing literature and empirically based on bivariate relationships (See Table 3). Nine factors (i.e., age, sources of family/friends, child's school, alcohol/substances as support, medical care challenges, satisfaction with national leadership, following government preventative recommendations, and life disruption) remained significant predictors, after gender, race, and 10 other variables were controlled for in the model. Older respondents, those who were more likely to agree that family/friends or their child's school served as a source of support, and those with higher levels of trust and/or satisfaction with the federal government had higher levels of agreement with the statement on coping. Even after all other factors were controlled for in the final model, the strongest prediction in the model was agreement that alcohol and/or substances served as a source of support for them during the COVID-19 crisis, individuals were less likely to agree with the statement about coping. Respondents who were overwhelmed by information on the crisis and/or experienced significant life disruption were less likely to agree with the statement about coping. The predictors in the final model explained 14% of the variance in the level of agreement with the statement about perceived level of coping/adaptation.

Table 2. Significant correlations with coping item.

	n	Mean	sd	r
My life was significantly disrupted by the COVID-19 outbreak	1299	5.05	1.33	−.179**
I was personally affected by the virus itself (e.g., personally contracted the virus, knowing people who have died, knowing many people in my community having it, etc)	1276	3.37	1.94	−.106**
I felt prepared for the COVID-19 outbreak	1323	2.50	1.59	.264**
I am able to evaluate information about COVID-19 based on the quality and	1309	4.95	1.14	.203**
I felt overwhelmed by the amount of information available about the COVID-19 outbreak	1320	4.17	1.61	−.157**
Source of Information				
Newspaper	1229	3.73	2.00	.076**
Social Media	1256	4.52	1.59	−.074**
Challenges Experienced				
Childcare	643	2.89	2.19	−.109**
Financial	1197	3.38	1.91	−.175**
Medical Care	1185	3.46	1.87	−.149**
Transportation	973	2.26	1.80	−.082*
Work	1165	4.66	1.72	−.161**
Sources of Support				
Alcohol and substances	1048	2.55	1.71	−.179**
Child(ren)'s school	622	3.52	1.79	.106**
Family/Friends	1309	5.4	1.04	.090**
Religious community	822	3.51	1.89	.082*
I based my personal preventative measures on government official recommendations	1315	4.73	1.30	.055*
I believe the measures taken by leadership (e.g., school closures, business closures, re-opening) were appropriate to the level of risk in my community	1325	4.75	1.45	.063*
I am satisfied with our national leadership's response during this COVID-19 outbreak	1295	2.11	1.69	.070*

*p <.05, **p <.01

Table 3. Hierarchical regression analysis of predictors of adapting/coping well to COVID-19.

Predictors	Model 1 β	Model 2 β	Model 3 B	Model 4 β	Model 5 β	Model 6 B
Age	.110**	.096**	.096**	.084*	.087**	.070*
Gender						
Male	.081**	.073*	.071*	.064*	.066*	.044
Transmale	−.029	−.031	−.035	−.039	−.039	−.050
Transfemale	−.030	−.029	−.028	−.026	−.026	−.026
Gender Queer	−.005	−.007	.001	−.008	−.004	−.005
Race/Ethnicity						
Hispanic	.009	.009	.003	.006	.001	.009
Mid East/N African	.049	.047	.049	.053	.052	.040
Native Haw/Pac Isl	.064*	.064*	.057	.060	.056	.057
White	.068	.066	.067	.059	.046	.054
Asian	.072*	.067	.062	.046	.045	.045
Am Ind/1st Nation	−.006	−.004	−.006	−.012	−.011	−.008
Multiracial	−.052	−.050	−.049	−.054	−.046	−.053
Other	.031	.028	.025	.031	.034	.040
Information source						
Newspaper		.018	.013	.024	.035	.030
Social Media		−.049	−.038	−.041	−.041	−.030
Source of Support						
Alcohol/Substances			−.184*	−.162**	−.161**	−.162**
Child's School			.049	.073*	.073*	.079*
Family/Friends			.069	.057	.054	.072*
Religious Comm			.021	.034	.021	.004
Challenges in Crisis						
Childcare				−.049	−.046	−.024
Financial				.064	−.072*	−.062
Medical Care				−.105**	−.099**	−.100**
Work				−.099**	−.096**	−.059
Republican Governor					.052	.054
Satisfaction Fed Lead					.078*	.081*
Followed Govt PrevMea					.048	.063*
Overwhelmed by Info						−.153**
Life Disruption						−.124**
Personally Affected						.003
Measures Appropriate						.026
R^2	.020	.021	.062	.099	.105	.140
R^2 change		+.001	+.041	+.037	+.006	+.035

n = 1096, *p < 0.05, **p = <0.005

Discussion

The results of this study provide important insight as to self-perceived coping and adaption in the early stages of the COVID-19 pandemic. The factors that contributed to higher reported coping were increased age, following preventative measures, support from family and friends, and support from childrens' schools. Feeling overwhelmed by the amount of information, level of life disruption, use of substances as support, challenges with medical care, and satisfaction with national government significantly predicted a lesser ability to cope.

As expected, micro, mezzo, and macro factors all contributed to a person's perceived coping, even in a time of expected "social distancing." At the micro level, we see that age, use of alcohol and substances, feeling overwhelmed by the amount of information, and level of life disruption were significant. At the mezzo level, support from family, friends, and childrens' school, and challenges to medical care all contributed to the ability to adapt.

Satisfaction with national government, as well as the medical care challenges, are all sources of macro stressors that impacted coping.

Those who reported following preventative measures, which would presumably include social distancing, were found to cope better. Further, those who reported relying on family and friends were found to cope better. It is unclear through this survey if the support used to cope was virtual, or in-person, and if there are differences in the impact of virtual versus in-person support. As COVID-19 continues for the foreseeable future, this could be an area of further examination. It is important to remember that despite the recommendation to social distance, social support is needed from family and friends, and impact people's ability to cope.

The findings from this study highlight that extra support is needed from schools. Those who found support through school resources coped better. Because the shutdowns were unprecedented, schools had to quickly move their schooling to remote learning. Besides the educational ramifications of the COVID-19 pandemic (Daniel, 2020; Dorn et al., 2020; Reich et al., 2020), there also needs to consideration about how school closures impact both children and their families, more broadly. Further, enhancing school support during a shutdown is imperative, as there is a real possibility of a child abuse epidemic (Galea et al., 2020).

Those who reported utilizing alcohol or substances were found to be associated with lower levels of coping/adapting. These findings are consistent with the previous literature that suggests that substances were used as a form of maladaptive coping (Berenz et al., 2016; Galea et al., 2020; North et al., 2002; Sheerin et al., 2016) and highlight that substance and alcohol use may be rising (Ornell et al., 2020). Because this study utilized a single item to assess use of alcohol or substances, the association between alcohol and substance use and coping in times of pandemic should be examined more in depth in the future. Factors such as frequency, amount, and type of use should be explored for the association with coping. Additionally, social workers can work toward prevention efforts with the knowledge that substances are more likely to be used during these stressful times.

It is understandable that the results found being overwhelmed by the amount of COVID-19 information was associated with decreased coping. In a content analysis study that examined people's reasons for following preventative measures or not, it was found that people who received "mixed messages" about preventative measures (e.g., effectiveness of mask wearing) tended to yield inconsistent practice and varying degree of compliance (Wang et al., Under review). In the United States, the lack of a unified response to the pandemic may have contributed to this frustration, and would also explain the finding of people's dissatisfaction with the national leadership. Communication in emergency situations from national leadership has been seen as problematic in the past. During the Flint Water Crisis, government officials delayed intervening and sharing information publicly (Boufides et al., 2019), resulting in lost trust from constituents.

This study found that challenges related to medical care were related to level of coping. Immediate intervention to ensure continuity and access to medical care would be another role for social workers in future situations. This needs to happen at both the micro, mezzo, and macro levels. At the micro level, strengthening assessment and services through telehealth or at non-traditional places, such as pharmacies, grocery stores, or even in people's home may help improve access and outcomes. At the mezzo level, social workers can assess a community and their overall access as well as the level of impairment due to the

disaster or crisis. On the policy level, social workers can advocate for laws to be put in place to monitor these situations, to ensure access to medical care to the widest segments of the population.

Interestingly, this study revealed more factors that contributed with lesser ability to cope than it did factors that contributed to increased coping. Both are equally important. Identifying sources of stress and decreased coping helps us as social workers to plan interventions and advocacy in areas of need. We can also enhance and strengthen the positive coping mechanisms, such as support from family and friends. Age was the only demographic that significantly impacted coping levels. While our findings contradict past findings that show disproportionate impact of crises on people of color (Davidson et al., 2013) and women (Enarson & Scanlon, 1999; Godderis & Rossiter, 2013; McLaren et al., 2020; Peek & Fothergill, 2008), it is important to note the racial and gender imbalance in this sample, and not to eliminate these factors from future research.

There are some limitations to this study that need to be noted. First, a single, self-reported, item was used to assess coping. In the interest of increasing participation, and providing a breadth of topic coverage, additional ways of measuring coping were not used in this study and we opted for single indicators. In the future, using an instrument that is more comprehensive to assess coping would give a more thorough estimate, rather than general picture. Another limitation relates to the non-probability sampling method, which yielded a study sample that is not representative of the general population. For example, the sample was highly educated, and almost all women. The use of an internet survey might also have skewed the responses. Potential participants without access to internet to complete the survey might differ in their self-reported ability to cope. It is, also, important to note that our final regression analysis only accounted for 14% of the variance. There are still many factors not captured in this research that relate to coping with the pandemic. Even with the limitations identified here, this study provides preliminary evidence from the early stages of the pandemic to help inform the trajectory of people's needs and strengths during COVID-19.

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