Coping with COVID-19 at the community level: Testing the predictors and outcomes of communal coping

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Abstract
The COVID-19 pandemic is a socially shared health issue that has had profound impacts on all aspects of community life and requires collaborative coping responses. Drawn from the extended theoretical model of communal coping, we examined (a) factors that promote community members’ communal coping and (b) the influence of communal coping on perceived stress and positive adaptation in the context of COVID-19. An empirical test based on the survey of participants (N = 256) living in the state of New York showed that strong community identity, but not the length of residency in the same community and integrated connectedness to communication resources of the community, was positively associated with communal coping orientation. Having a higher communal coping orientation was not related to perceived stress, but it was positively related to engagement in COVID-19 preventive behaviors. The implications of these findings for understanding communal coping at the community level and future directions are discussed.

KEYWORDS
communal coping, community identity, COVID-19, positive adaptation, socially shared health issues

1 | INTRODUCTION
Beyond being a threat to personal health, the COVID-19 pandemic has profound impacts on all aspects of community life. Considering the spread and mortality rates, as well as a lack of medication treatments and vaccines, many communities implemented containment measures that ranged from recommended social distancing to
community-wide quarantine (Parodi & Liu, 2020). In the context of the pandemic, individuals’ behaviors can have consequential impacts on other community members’ health. The effectiveness of preventive measures to avoid COVID-19, including wearing masks and social distancing, depends on community members’ cooperative actions. Furthermore, community members are often the ones on whom people rely to seek support, resources, and possible solutions when experiencing a shared health concern (Afifi et al., 2020; Smith, 2006).

When facing a socially shared health issue like the pandemic, community members may engage in communal coping, which is a process of constructing shared appraisals of the stressor and proactively managing it together (Lyons et al., 1998). Importantly, communities vary in their capacity to cope with a shared stressor. When people live in a community where their basic needs are not met (e.g., economic insecurity, unsanitary living conditions) or social capital is lacking (e.g., social trust, relationships), cooperation among community members is less likely to occur (Bashar & Bramley, 2019; Pretty, 2003). In contrast, people living in a community with more extensive resources are better positioned to engage in communal coping (Afifi et al., 2020; Hobfoll, 1989). Research on communal coping has shown that it can enhance community resilience and growth as well as promote individuals’ physical and mental health (Afifi et al., 2020). Given the positive outcomes associated with communal coping, communities with a social environment and infrastructure that render more opportunities for communal coping are likely to help their members manage stressors more effectively (Afifi et al., 2020).

This study is a step toward understanding how and why community members communally cope with a shared health concern like the COVID-19 pandemic. Given the scope of COVID-19, its associated stress, its impact on community life, and its need for collective actions to manage the situation, the pandemic provides a unique context in which to consider the predictors and outcomes of communal coping at the community level. To frame this study, we drew upon the extended theoretical model of communal coping (TMCC), which suggests communal coping as a communicative process through which people appraise the stressor as shared and manage it together (Afifi et al., 2020). The specific goals of this study are twofold. First, we seek to examine factors that promote communal coping; specifically, we are interested in the influence of various aspects of community life on communal coping. Second, we aim to illuminate the impact of communal coping on people’s responses to COVID-19, including perceived levels of stress and engagement in preventive health behaviors.

1.1 The extended theoretical model of communal coping

Although coping was originally conceptualized as an individual process (e.g., Lazarus, 1985), increasing research efforts have been devoted to understanding the social process of managing stress (Afifi et al., 2020; Lyons et al., 1998). Research on communal coping is based on the assumption that individuals are embedded in larger social contexts as they encounter and manage stress (Lyons et al., 1998). The extended TMCC (Afifi et al., 2020) explains communal coping as a communicative process that is characterized by two continuous dimensions. The appraisal dimension concerns ownership of the problem, which varies from my problem and your problem to our problem (Afifi et al., 2006; Lyons et al., 1998). The action dimension addresses responsibility for the stressor, which could be perceived as my, your, or our responsibility (Afifi et al., 2006; Basinger, 2018). Communal coping occurs when people appraise the stressor as jointly owned (i.e., our problem) and proactively act upon it together (i.e., our responsibility) (Afifi et al., 2020).

While most of the work on communal coping focuses on dyads or family members’ coping, different types of stressful events, such as natural disasters, genocides, and public health threats, present a context where community members face shared problems and responsibilities to manage the stressor together (Gasparre et al., 2010; Seifu Estifanos et al., 2020). A few existing studies on communal coping at the community level have demonstrated the benefits of community members’ cooperative problem-solving processes. For example, Richardson and Maninger (2016) found that communal coping during a disaster recovery entailed material assistance and information sharing, which reduced the negative impact of the stressor on individuals and benefitted the community rebuilding efforts.
Similarly, one ethnographic fieldwork that investigated Tamil refugees in Norway showed that communal coping among Tamil refugees promoted desired outcomes like higher educational achievement and better access to healthcare (Guribye et al., 2011). Taking a qualitative, exploratory approach, these studies illuminated how communal coping may be manifested in the aftermath of a community-wide threat.

A recent global health crisis, the COVID-19 pandemic, presents a context wherein public health responses to the continuing health threat can harness the power of communal values to empower community members to support one another. Notably, the pandemic both constrained some forms of communication, while it increased the availability of new alternatives. For example, during the initial period of the pandemic, lockdown orders may have decreased opportunities for face-to-face encounters within a community. At the same time, restrictions of in-person communication fostered community members’ efforts to connect to each other via technology-mediated communication (e.g., phone calls, texts, and social media; Abel & Taubert, 2020; Gibbons, 2020). While acknowledging the importance of communication in facilitating communal coping, the focus of this paper is on features of the community that facilitate individuals’ orientation toward communal coping rather than actual communication behaviors associated with communal coping. We hoped to examine community-wide conditions that render opportunities for communal coping because different communities may exhibit different capabilities to manage a shared stressor. Fostering communal coping would require attention to features of the community that individuals are embedded in and processes by which communal coping mobilizes individuals toward positive adaptation and better psychological well-being.

### 1.2 Predicting community members’ communal coping

Drawing from the extended TMCC, we focus on three aspects of community life that can potentially predict communal coping: (a) the length of residency in the same community, (b) the extent to which people identify with their community, and (c) the integrated connectedness to communication resources of the community. Although the scope of the COVID-19 pandemic expands to the entire globe, we focused on geographic communities. In doing so, we followed individuals’ perceptions of the community rather than specifying the scope of a geographic community to which individuals might belong. Whether it being a neighborhood, town, or county, we expected that individuals can develop communal coping orientation with their geographic community if they perceive themselves as members of that community.

Communal coping could be a matter of how familiar individuals are with their community’s history, the current state of affairs, and resources to address a problematic situation (Guribye et al., 2011; Richardson & Maninger, 2016). In this sense, the length of residency in the same community is of particular relevance to communal coping because spending more time in one area allows for more opportunities to be familiar with the community. Specifically, as people spend more time in one area, they are likely to develop community attachment and a sense of belonging that orient them to communal coping (Goudy, 1982; Kang & Kwak, 2003; Sampson, 1991). In contrast, residents who are relatively new to the community may have a weak connection to their community members. Consequently, they may be more reluctant to share their concerns or negative emotions about communal issues with other people in the community, and thus, are less likely to engage in collaborative coping processes (Affifi et al., 2020; Berger, 2014). Having the length of residency as a proxy for the opportunity to engage in communal coping, we predict that people who have lived in the same area for longer are more likely to exhibit communal coping orientation.

The extent to which people identify with their community members may also predict communal coping (Affifi et al., 2020). Drawn from the definition of social identity (Tajfel, 1982), community identity could be understood as individuals’ self-concept which derives from their knowledge of community membership, as well as common values and emotional connections with the community. The concept of community identity has often been employed to explain how community members make sense of their social world and respond to shared problems (Mannarini &
Fedi, 2009; Messer et al., 2015). Individuals who identify with a community are those who see their community membership as central to who they are, are proud of their community membership, and act in ways that are consistent with their community membership (Hogg & Reid, 2006; Tajfel & Turner, 1986). Research on community identity has demonstrated that when people are connected to a larger community, they are more prone to construct shared narratives, exchange resources with other community members, and take responsibility in collective problem-solving processes (Chamlee-Wright & Storr, 2011; Richardson & Maninger, 2016). Thus, we predict that community identity can become a resource for communal coping that shapes the way in which community members make sense of their circumstances, assess their capabilities and limitations, and adopt collaborative coping strategies (Haslam & Reicher, 2006; McNamara et al., 2013).

In relation to the influence of social contexts on communal coping orientation, we turn to a community’s communication infrastructure. According to the communication infrastructure theory (CIT; Kim & Ball-Rokeach, 2006), communication fabric, or the communication infrastructure of a community, matters to residents’ engagement in shared problems. Specifically, each community has a storytelling network comprised of microlevel (e.g., residents), mesolevel (e.g., geo-ethnic or local media and community organizations), and macrolevel (e.g., mainstream media) storytellers that are embedded in a communication action context. An integrated connectedness to a community’s storytelling network refers to the extent to which critical community storytellers, such as neighbors, community organizations, and local media, are integrated into individuals’ everyday lives. Because a connection to one storyteller may increase the likelihood of connections to other storytellers in the network (e.g., the benefits of local media use may depend on the frequency of interpersonal communication with neighbors), it is critical to consider the overall degree of integration with the storytelling network. As people become more connected to their community’s storytelling network, they are more likely to create and disseminate local stories (Kim & Ball-Rokeach, 2006). Studies of CIT conducted in health contexts have also shown that connectedness to a community’s storytelling network offers individuals more opportunities to become aware of local health issues and easier access to health-promoting resources (Matsaganis & Wilkin, 2015; Zhao Martin et al., 2019). These studies are in line with Hobfoll’s (1989) claim that people with more extensive resources have a greater capacity to mobilize collective action to manage a stressor. Thus, we predicted that in the face of a shared problem, people who are better connected to a community’s storytelling network have better access to resources and are more likely to engage in communal coping.

In sum, people who have lived in the same community for a longer period of time, identify with the community to a greater extent, and are better connected to a storytelling network of the community are more likely to be concerned about COVID-19’s impact on the entire community and community’s overall preparedness against COVID-19. Hence, they are more likely to perceive the COVID-19 pandemic as a shared problem and seek ways to manage it together. Accordingly, we proposed that:

H1: Individuals with (a) a longer length of residency in the same community, (b) stronger community identification, and (c) greater connectedness to a community’s storytelling network are more likely to communally cope with COVID-19.

1.3 | Outcomes of communal coping

The extended TMCC explains that communal coping can foster resilience and buffer against stress (Affifi et al., 2020). Substantial evidence has shown that communal coping can enhance a sense of coping efficacy, manage uncertainty surrounding stressors, and build motivation to achieve positive ends (Helgeson et al., 2018; Lewis et al., 2006). When community members communicate about their shared stressors, not only do they share their experiences and associated emotions, but they also share available resources and possible solutions (Affifi et al., 2020; Richardson & Maninger, 2016). As such, acting upon a stressor together can build collective resolve, which helps community members cope with adversity in ways that they might not be able to manage alone.
(Buzzanell & Houston, 2018; Houston, 2018; Lyons et al., 1998). That is, having access to greater resources and repertoires of solutions allows community members to reappraise their stressors as less threatening because they are less likely to feel that they are alone in the coping process (e.g., Helgeson et al., 2017; Koehly et al., 2008).

Communal coping also offers opportunities for individuals to collaborate and implement behavioral strategies to reduce the negative impacts of the stressor on the collective (Lyon et al., 1998). Communal coping accompanies considerations of not only what is best for the self but also what is best for the collective (Richardson & Maninger, 2016). Notably, the process of communal coping entails different sets of behaviors, including communicating about problem management strategies, joint decision making and planning regarding the action, and working together to solve the problem (Lewis et al., 2006; Nissen et al., 2018). For a public health crisis like the COVID-19 pandemic, one of the ways in which people can reduce the potential threat of the virus is by practicing preventive behaviors (Qian & Jiang, 2020; Sajed & Amgain, 2020). In this study, we were particularly interested in people’s preventive health behaviors like wearing a mask and keeping social distancing because these measures protect community health and reduce the negative impact of the pandemic on the community. We expected that individuals with a higher tendency to communally cope with the pandemic are more likely to engage in preventative health behaviors that enhance community health. Taken together, we predicted that:

H2: Individuals with higher communal coping orientation are likely to (a) have lower levels of stress and (b) engage in preventive behaviors against COVID-19.

2 | METHOD

To test the proposed hypotheses, an online survey was conducted between June 10th and June 26th in 2020. Study participation was limited to residents of New York State because they were (a) severely affected by the pandemic at the time the study was conducted and (b) subject to the same state-wide COVID-19 guidelines (New York State Governor’s Press Office, 2020).

2.1 | Participants

Following approval by the Institutional Review Board, participants were recruited from a Qualtrics prepaid panel. Of 265 participants who completed the survey, responses from seven participants who took less than 5 min to complete the survey and two participants who failed the attention check question were eliminated from the following analyses. The final sample included 256 residents of New York State (132 females and 124 males). The average time to complete the survey was less than 20 min ($M = 18.03, SD = 24.42$). Of 62 counties in New York State, participants were from 37 counties. The top three counties in which participants resided were New York City (26.1%), Queens (8.6%), and Bronx (7.8%). The average age of the participants was 46.31 years ($SD = 17.31$, $Mdn = 46.5$, Range: 18–89). The majority of participants (61.1%) self-identified as White (14.8% Latina(o), 10.5% African American, 4.7% Asian, 0.4% Native American, and 8.6% multiethnicity).

2.2 | Procedures

Participants completed an online questionnaire via Qualtrics. After providing informed consent, participants responded to socio-demographic questions. Then, they were asked to think about their community and community members broadly as they filled out the survey. Specifically, we presented the following instruction at the very beginning of the survey:
In this study, we use the word "community" broadly. When asked to think about the community and community members in the following, we want you to think about people who live near you, whether in your neighborhood, town, or county. Please take a moment to think about the community you belong to and answer the following questions.

Participants responded to measures assessing communal coping, their perceptions of the community, and their experience with COVID-19. After responding to all the questions for this study, participants received a supportive message and were asked to report their evaluations of the message, which were investigated in a different study (see Tian et al., 2021).

2.3 | Measures

We used multi-item scales to assess communal coping, community identity, integrated connectedness to a storytelling network, perceived stress, and preventive behaviors against COVID-19. To test the measurement properties of these scales, a confirmatory factor analysis was conducted in AMOS version 26. Based on previous research (Lyons et al., 1998), we modeled communal coping as a second-order latent construct with appraisal and action dimensions as two first-order constructs. The measurement model included all items for each latent construct and latent constructs were allowed to covary. The following criteria were used to evaluate the overall model fit: $\chi^2/df < 3.00$, $p < 0.0001$, comparative fit index (CFI) > 0.90, root mean square error of approximation (RMSEA) < 0.08 (Brown & Cudeck, 1993; Kline, 2016). The fit for the initial model showed room for improvement, $\chi^2/df = 1.87$, $p < 0.0001$, CFI = 0.89, RMSEA = 0.06, 90% confidence interval (CI) = [0.055, 0.064]. After respectively removing one item from the communal coping scale and perceived stress scale, the resulting measurement model for the variables included in the study showed an acceptable fit, $\chi^2/df = 1.77$, $p < 0.0001$, CFI = 0.91, RMSEA = 0.06, 90% CI = [0.051, 0.062]. Table 1 displays bivariate correlations among the variables.

2.3.1 | Communal coping

Based on Basinger (2018), a total of six items were created to assess appraisal and action dimensions of communal coping with the COVID-19 pandemic. To assess communal coping, we presented the following instruction: "Thinking about how you and your community have been handling COVID-19, please indicate the extent to which you agree with the following statements." For the appraisal dimension, participants were presented with the stem, "When I think about COVID-19, I mostly think about..." which was followed by three statements ("how it is my community's health issue that we face together;" "how it influences my community members' lives;" "how my community is affected by it"). For the action dimension, participants were asked to indicate their agreement to three statements ("It is my community's responsibility to prevent the spread of COVID-19;" "My community members take an active role in adapting to a new normal following COVID-19;" "My community members rely on one another to cope with COVID-19"). Responses were marked on a 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree). Based on the CFA, the first item from the action dimension was eliminated. Drawn from Helgeson et al. (2018), a composite score of communal coping was created by combining the items for appraisal and action dimensions ($\alpha = 0.76$, $M = 3.96$, SD = 0.62).

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1We observed that one item of the action dimension of communal coping ("It is my community's responsibility to find ways to cope with COVID-19") had standardized factor loading of 0.24, which is below the acceptable threshold of 0.40 (Stevens, 1992), and thus, we removed this item. In addition, we deleted one item from the perceived stress scale ("Have you felt nervous about COVID-19?") based on high modification indices.
2.3.2 Length of residency in the community

Length of residency in the same community was measured with the following question: “How long have you been living in the same residential area?” Three response options were provided: (a) less than 1 year, (b) about 1 year, and (c) more than 1 year. Responses to those who indicated as less than 1 year were coded as 0 and about 1 year were as 1. For those who indicated as more than 1 year, an additional question asked them to write down the specific number of years, and this number was used to indicate their length of residency in the community (\(M = 15.60, SD = 14.58, Mdn = 10.00, \text{Range: } 0-89\)).

2.3.3 Community identity

Community identity was measured with six items adapted from a three-dimensional measure of social identification scale (Cameron, 2004). We presented the following instruction: “In the following, we would like to ask your thoughts about your community in general. Please indicate the extent to which you agree with each statement below.” The scale composed of three identity dimensions that each had two items: cognitive centrality (e.g., “Being a member of community is an important reflection of who I am”), in-group affect (e.g., “In general, I am glad to be a member of my community”), and in-group tie (e.g., “I have a lot in common with my community members”). Responses were marked on a 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree). Responses were averaged into a composite score, with higher scores indicating stronger identification with the community (\(\alpha = 0.93, M = 3.53, SD = 0.88\)).

2.3.4 Integrated connectedness to a storytelling network (ICSN)

Based on Kim and Ball-Rokeach (2006), an integrated connectedness to a storytelling network was computed as a weighted summation of three interaction terms between the intensity of interpersonal neighborhood storytelling (INS), scope of connections to community organizations (OC), and local media connectedness (LC). Each of three variables was standardized and then entered into the following formula:

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\text{ICSN} = \sqrt{\text{LC} \times \text{INS}} + \sqrt{\text{LC} \times \text{OC}} + \sqrt{\text{INS} \times \text{OC}}.
\]
The entire set of items for each variable is reported in Appendix. The distribution of computed ICSN score ranged from 1 to 15 (\(M = 6.37, SD = 3.47\)).

**Intensity of interpersonal neighborhood storytelling**
The intensity of participation in interpersonal storytelling was measured with five items (e.g., “How often do you have discussions with your community members about things happening in the community?”) modified from previous studies (Kim & Ball-Rokeach, 2006; Smith et al., 2020). The responses were measured using a 5-point Likert-type scale (1 = never, 5 = always).

**Scope of connections to community organizations**
The scope of connection to community organizations was assessed with two-step measures. First, participants were asked about the existence of eight types of community organizations (e.g., political, volunteer, and religious organizations). Responses were marked on two response options with verbal labels, and later coded as 1 = yes and 2 = no (do not exist or not aware). Then, if participants indicated that there exists an organization, the frequency of their participation in each organization was asked using a 5-point Likert-type scale (1 = never, 5 = always).

**Local media connectedness**
The connectedness to local media was assessed with two-step measures. First, participants were asked if there exist seven types of local media outlets (e.g., local/neighborhood newspapers, radio broadcasts, and magazines). Responses were marked on two response options with verbal labels, and later coded as 1 = yes and 2 = no (do not exist or not aware). Then, if participants indicated that there exists a media outlet, the frequency of each media outlet usage was asked using a 5-point Likert-type scale (1 = never, 5 = always).

2.3.5 | Perceived stress

Figure 1 adapted from Cohen et al. (1983), perceived stress was measured with four items (e.g., “Have you felt that you were unable to control important things in your life due to COVID-19?”). Responses were marked on a 5-point Likert-type scale (1 = never, 5 = always) and averaged into a composite score, with higher scores indicating a higher level of stress (\(\alpha = 0.81, M = 2.85, SD = 0.94\)).
2.3.6 | Preventive health behaviors

Preventive behaviors against COVID-19 was assessed with three items created for this study: "Have you worn a mask whenever you go outside?", "Have you tried to avoid unnecessary social gatherings?", "When you are talking with someone who does not live in the same household, have you tried to keep 6 feet apart?" These preventive measures were suggested by the New York State Department of Health (2020). Responses were marked on a 5-point Likert-type scale (1 = never, 5 = always) and averaged into a composite score, with higher scores indicating greater engagement with COVID-19 prevention behaviors (α = 0.62, M = 4.43, SD = 0.68; Figure 2).

2.3.7 | COVID-19 involvement

Involvement with COVID-19 was assessed with six items. Participants were asked to place a checkmark beside each statement that is true for them: "I have not been directly impacted by COVID-19," "I have lost income due to COVID-19," "I work on the front line of the COVID-19 pandemic response (e.g., physicians, nurses, and health-support workers)," "Someone living in my household works on the front line of the COVID-19 pandemic response (e.g., physicians, nurses, and health-support workers)," "I have at least one family member or a close friend who was tested positive for COVID-19," "I have lost at least one family member or a close friend to COVID-19." Involvement with COVID-19 was calculated by summing up the number of checkmarks a participant had. The score ranged from 0 to 6, with higher scores indicating greater involvement with COVID-19 (M = 1.62, SD = 1.37). Because the items were considered formative indicators, alpha reliability was not relevant (Bollen & Diamoantopoulos, 2017; Figure 3).

3 | RESULTS

The proposed hypotheses were tested using structural equation modeling in AMOS version 26. The initial model included three exogenous variables (length of residency, community identity, and connectedness to a community’s communication resources). Communal coping was treated as a mediating variable, and perceived stress and preventive health behaviors were the outcome variables. The initial model included all possible paths from the exogenous variables to the mediating variable, all possible paths from the mediating variable to the outcome variables, but no direct paths from the exogenous variables to outcome variables. Because COVID-19 involvement was
significantly associated with substantive variables, we entered COVID-19 involvement as a covariate in the model and constructed paths from it to endogenous variables, including communal coping, perceived stress, and preventive health behaviors.

To account for measurement error in the scales, we used parcels as single-item indicators of the latent variables and set the error variance of each parcel to $(1-\alpha)\sigma$ (Bollen, 1989). The initial model did not fit the data, $\chi^2/df = 7.36, p < 0.0001, \text{CFI} = 0.87, \text{RMSEA} = 0.16, 90\% \text{ CI} = [0.12, 0.20]$. Modifications to the initial model proceeded as follows. First, we eliminated nonsignificant paths associated with the control variable, such that paths from COVID-19 involvement to communal coping orientation and to preventive behaviors were respectively eliminated. Next, we eliminated three nonsignificant paths between the main variables, including a path from the connectedness to a community’s storytelling network to communal coping orientation, from the length of residency to communal coping orientation, and from communal coping orientation to perceived stress. Finally, we added two paths based on the modification indices, including a path from the length of residency to perceived stress and a path from the length of residency to preventive health behaviors. To maximize degrees of freedom and increase the challenge of fitting the final model, all exogenous variables were retained. The resulting model showed good fit to the data, $\chi^2/df = 1.93, p < 0.05, \text{CFI} = 0.97, \text{RMSEA} = 0.06, 90\% \text{ CI} = [0.02, 0.10]$.

### 3.1 Hypotheses testing

#### 3.1.1 Predictors of communal coping

H1 predicted that individuals who (a) have lived in the same community for longer, (b) identify with the community to a greater extent, and (c) have a stronger connectedness to a community’s storytelling network are more likely to communally cope with COVID-19. The results from the initial model showed that the relationship between the length of residency and communal coping orientation was not significant ($\beta = 0.10, p = 0.07$). In addition, individuals’ connectedness to a community’s storytelling network was not significantly associated with communal coping orientation ($\beta = 0.03, p = 0.74$) in the initial model. Thus, these two paths were eliminated in the modified model, and

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2We acknowledge that model fitting is different than model testing especially because some paths in the modified model were not predicted by the theory. Thus, the findings from the modified model may be idiosyncratic to the current data set and should be interpreted as exploratory.
H1a and H1c were not supported. In the final model, the extent to which people identify with their community was positively associated with communal coping orientation ($\beta = 0.75, p < 0.001$). Thus, H1b was supported.

### 3.1.2 | Outcomes of communal coping

H2 predicted that individuals with higher communal coping orientation are likely to (a) have lower levels of stress and (b) more engagement in preventive health behaviors against COVID-19. Communal coping orientation was not significantly associated with perceived stress related to COVID-19 in the initial model ($\beta = 0.01, p = 0.93$), and hence, H2a was not supported. In the final model, communal coping orientation was positively related to engagement in preventive health behaviors against COVID-19 ($\beta = 0.26, p < 0.01$), and thus, H2b was supported.

### 3.2 | Post-hoc analyses

#### 3.2.1 | Influence of the length of residency

The modified model revealed an unanticipated influence of the length of residency on both indicators of positive adaptation. In particular, the length of residency had a negative association with perceived stress ($\beta = -0.35, p < 0.001$) and a positive association with preventive health behaviors against COVID-19 ($\beta = 0.22, p < 0.01$). These results suggest that people who have lived in the same community for a longer period of time are likely to experience less stress against COVID-19 and actively engage in preventive health behaviors.

#### 3.2.2 | Mediating role of communal coping orientation

The support of H1b and H2b prompted us to explore how communal coping orientation mediated the association between community identification and protective health behaviors against COVID-19. The indirect effect was estimated in AMOS version 26 using bootstrapping procedures (5000 bootstrap samples) with bias-corrected confidence intervals set as 95% (Hayes & Scharkow, 2013). The indirect effect of community identification on protective health behaviors through communal coping orientation was statistically significant ($\beta = 0.20, p < 0.05, 95\% \text{ CI} = [0.02, 0.36]$). The result showed that people with a stronger community identity were likely to adopt protective health behaviors because they were more likely to have a communal orientation to managing COVID-19.

### 4 | DISCUSSION

The goal of this study was to understand how various aspects of community life influence the way in which community members communally cope with COVID-19 that may facilitate positive adaptation to this public health threat. Although people can manage stressors associated with the pandemic individually, community members may also manage the stressors collaboratively as they provide support, share resources, and co-construct solutions. Considering the highly contagious nature of COVID-19, the effectiveness of preventive measures people take depends on community members' cooperative behaviors. Grounded in the extended TMCC (Afifi et al., 2020), we examined the predictors and outcomes of communal coping at the community level.

The results showed that the extent to which people identify with their community, but not the length of residency in the same community and integrated connectedness to a storytelling network of the community, was positively associated with communal coping orientation. The length of residency was directly related to positive...
adaptation to COVID-19, showing a negative association with perceived stress and a positive association with preventive health behaviors. Having a higher communal coping orientation was not related to perceived stress, but positively related to engagement in preventive behaviors. Communal coping orientation mediated the relationship between community identity and preventive behaviors. The following sections discuss the implications of these results, limitations of this study, and directions for future research.

4.1 | Theoretical implications

As demonstrated in substantial research on community-oriented health promotion efforts, community members who have diverse backgrounds, skills, and knowledge can mobilize their resources to improve health and well-being of their community (e.g., Stokols, 1996; Wagemakers et al., 2010). Considering the unique benefits community members’ collaboration can bring to community’s well-being, theorizing efforts should be attentive to the unique features of the community that promote communal coping in comparison to that of other social relationships, such as romantic relationships and family units.

In our study, community identity turned out to be the strongest predictor of communal coping orientation. Community may present a unique context where a sense of identification with a group is particularly important in facilitating organized responses to socially shared health issues. When people have explicit ideas of a social group (e.g., couples legally bound with marriage), they are likely to have a clear understanding of their shared problem (e.g., problems that affect their marriage) and with whom to share the responsibility (e.g., their married partner). In comparison, communities often do not have set boundaries (Colombo & Senatore, 2005; McMillan & Chavis, 1986). When there is ambiguity as to the scope of the community, the extent to which people identify with their community may shape their perceptions of the community’s shared problems and responsibilities, and motivate them to engage in collective problem-solving processes.

Contrary to our expectations, the length of residency and integrated connectedness to a communication network of the community were not associated with communal coping orientation. One common feature of these two variables is that both of them allow for more exposure to the community environment and more interactions with community members. The findings indicate that merely spending more time in one area or having more opportunities to communicate with other community members does not guarantee a higher likelihood of communal coping. For communal coping to occur, individuals must appraise the stressor as jointly owned, communicate specifically about the stressor, and actively address the stressor together (Afifi et al., 2020). Unless community members feel comfortable discussing the stressor and explicitly seek ways to manage the stressor together, the longer residency in one area and stronger connections with a community’s communication network are not likely to orient people toward communal coping.

It is worth noting that although the SEM revealed a nonsignificant association between ICSN and communal coping orientation ($\beta = 0.03, p = 0.74$), the zero-order correlations (Table 1) showed a strong positive relationship between ICSN and communal coping orientation, $r (254) = 0.45, p < 0.01$. One explanation for this is that community identity and ICSN are highly correlated in this data, $r (254) = 0.64, p < 0.01$, and thus including both of them as exogenous variables in the SEM resulted in ruling out the possible influence of ICSN on communal coping orientation. We included both community identity and ICSN in the model because we wanted to test which one is a stronger predictor of communal coping, and the results showed that community identity is the driving factor. These results underscore the importance of fostering a sense of community identity in the face of a socially shared stressor.

Interestingly, the longer length of residency predicted lower levels of stress and greater engagement in preventive health behaviors. One explanation for these results is that people who lived in the same area for a longer period of time are not only more likely to be familiar with the environment and the people around them, but they may also have greater access to the community’s resources (Carson et al., 2010). Even though the longer length of
residency may not promote communal coping, it may enable people to draw resources they need to cope with the situation. Having confidence in their ability to pool resources and ask for help when needed, these individuals may be less distressed during the pandemic. Moreover, people who lived in the same area for longer are more likely to develop community attachment (Goudy, 1982; Sampson, 1991) and a sense of community belonging (Prezza et al., 2001). Even if these individuals do not necessarily turn to joint problem-solving to combat COVID-19, they may still be concerned about what they can do to protect their community. We speculate that for those individuals, motivation to protect their community would contribute to their engagement in COVID-19 prevention behaviors.

In contrast to our expectation that communal coping orientation would predict both indicators of positive adaptation, it was only positively associated with active engagement in preventive behaviors, but not the level of stress associated with COVID-19. Regarding the finding that communal coping did not help alleviate stress associated with the pandemic, we wonder if communal coping may relieve stress for some people (e.g., Hobfoll et al., 2002; Koehly et al., 2008), while for others, the process of communal coping may absorb other people’s worries and anxieties from disrupted daily lives (e.g., Smith et al., 2018). Indeed, the scholarship on emotional contagion speaks to the possibility that communal coping might lead to the transfer of stress among community members (cf. Hatfield et al., 2014). The current study design that assessed the overall relationship between communal coping orientation and perceived stress does not illuminate the conditions in which communal coping might lead to alleviation versus elevation of stress. If two contrasting outcomes regarding levels of stress are possible, future studies should investigate when and why communal coping may produce distinct outcomes.

The posthoc mediation analysis revealed that communal coping orientation mediated the relationship between community identity and preventive health behaviors. Consistent with our results, studies have shown that orienting people to think in terms of a social group (vs. the self) promoted their preventive health behaviors. For example, in the context of COVID-19, Jordan et al. (2020) demonstrated that compared to self-interested messages (“avoid getting coronavirus”), prosocial messages (“avoid spreading coronavirus”) were more effective in motivating prevention behaviors. Jordan and colleagues also found that perceiving coronavirus as a public threat was more strongly associated with prevention intentions than appraising it as a personal threat. Similarly, Luttrell and Petty (2020) demonstrated that emphasizing the need to protect everyone’s health (vs. one’s own health) had a greater impact on social distancing intentions and that this tendency was even more salient among those who perceived public health as a moral issue. In keeping with this body of work, our findings suggested that people who think and act in terms of their community are more likely to perceive a health threat as a shared problem that needs to be addressed through joint efforts of the community members (e.g., by engaging in preventative health behaviors).

4.2 Practical implications

This study has several practical implications for communal coping at the community level. In developing communal coping interventions, it may be useful to seek ways to build community identity. Given that the extent to which a person identifies with the community was positively related to communal coping orientation, an intervention might focus on orienting people toward shared values, norms, and emotional involvement with the community (Tajfel & Turner, 1986). When members of the community share a stronger sense of collective identity, they are more likely to think (“our problem”) and act (“our responsibility”) in terms of their community, which can lead to stronger motivation to engage in preventive health behaviors.

From a practical standpoint, it is noteworthy that the integrated connectedness to communication resources of the community was not a significant predictor of communal coping orientation in the SEM results, but positively associated with communal coping orientation in the zero-order correlation. Even though communication resources of the community play a less important role in orienting people toward communal coping compared to community identity, future efforts to enhance communal coping at the community level may still benefit by finding ways to utilize community’s communication resources.
Another way to foster health and well-being of the community is to mobilize the power of those who live in the same area for an extended period of time. Even though the length of residency was not related to communal coping orientation, people who lived in the area for longer experienced less stress and engaged in more preventive health behaviors. If these individuals have knowledge and skills to effectively manage a community-wide stressor because they are familiar with the area and are well-networked to draw resources as needed, community health promotion efforts could benefit from their lived experience. That is, it might be advantageous to encourage those who are effectively managing the stressor to share their experience and to participate in collective problem-solving processes.

4.3 | Limitations and future research

This study has several limitations worth noting. First, our study focused exclusively on New York State residents and their experience during the early stages of the pandemic. This decision allowed us to confine participants to those who were living in severely affected areas and were subject to the same state-wide COVID-19 guidelines. Although this decision allowed us to confine participants to those who were living in severely affected areas and were subject to the same state-wide COVID-19 guidelines, the study context involves some unique characteristics, which constrains the generalization of these findings to other situations. Future research should examine predictors and outcomes of community members’ communal coping in other health contexts, such as emerging versus chronic and common versus region-specific health issues.

Second, in this study, we focused on the community as it is understood by individual participants. Although our approach respected individuals’ sense of community, different ways of conceptualizing and operationalizing community-related perceptions require attention. For instance, instead of asking participants to think about the community as they understand it, researchers could present specific geographical or administrative boundaries to ask community-relevant questions in future studies.

Third, we hope to strengthen the ICSN measure in future studies. In this study, we assessed ICSN based on the frequency of (a) interpersonal storytelling with community members, (b) participation in community organizations, and (c) using local media. One of the limitations of this measure was that the standard anchors of the Likert-type scale to assess frequency (i.e., 1 = never, 2 = rarely, 3 = sometimes, 4 = frequently, 5 = always) might have not been as intuitive as we hoped them to be. For instance, participants might have had different ideas of what “always participating in volunteering organizations” or “always reading local newspapers” mean. Future studies should be more mindful in presenting the items to assess the frequency of engaging in the community storytelling network. Additionally, future studies should develop a measure that captures different dimensions of being connected, such as the breadth and diversity of the storytelling network.

As a final point, the cross-sectional nature of this study is another limitation. In the process of engaging in communal coping, individuals’ perceptions of the community may change. For example, people who have had positive experiences with communicating about a shared health problem with community members may become more strongly identified with their community. In case communal coping helps with positive adaptation, people may develop a stronger communal coping orientation. Uncovering the dynamics of community life, communal coping, and positive adaptation to stress remains a critical agenda for future research.

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CONFLICT OF INTERESTS
The authors declare that there are no conflict of interests.
DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available on request from the corresponding author.

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APPENDIX
Items for the Integrated Connectedness To Storytelling Network

Intensity of interpersonal neighborhood storytelling

The following questions ask how often do you talk with the community members about the following issues. How often do you talk with your community members about...?

- Anything related to the community,
- Things happening in the community,
- Problems affecting the community,
- Ways to make the community better,
- Opportunities to improve lives in the community.

Scope of connections to community organizations

Do the following organizations exist in your community? If so, how frequently do you participate in each organization?

- Sport or recreational organizations,
- Cultural organizations,
- Ethnic organizations,
- Religious organizations,
- Political organizations,
- Educational organizations,
- Volunteer organizations,
- Community development organizations.

Local media connectedness

Are there local media organizations or outlets in your community? If so, how frequently do you use (read, watch, listen) them?

- Local/newspapers (paper and online),
- Local/neighborhood radio broadcast,
- Local/neighborhood television broadcast,
- Local/neighborhood magazines (paper and online),
- Community organization newsletters (e.g., religious organizations, social clubs),
- Social media among neighbors,
- Townhall websites or newsletters.