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

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Impact of COVID-19 on the Mental Health and Distress of Community-Dwelling Older Adults☆

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ABSTRACT

The purpose of this study was to examine the mental health of community-dwelling older adults as they adapted their everyday health behaviors during the COVID-19 pandemic. In response to a telephone survey, 126 older adults described perceived changes in physical and mental health, and adaptations in their everyday health behaviors. Descriptive statistics, bivariate correlations, and multiple regressions revealed that participants experienced changes in mental and physical health, reduced health service access, lower social engagement, and increased coping behaviors. Greater negative social impact of the pandemic was associated with higher levels of COVID-19 distress. Reduced mental health was significantly related to reductions in health service access, health changes, and fewer adaptive coping behaviors.
Adaptive coping behaviors were helpful, just as reduced health access and social contact added risk for mental health problems. Suggestions were provided for alleviating mental health needs by increasing social contact and engaging in adaptive coping behaviors.

Introduction

The extent to which community-dwelling older adults adjusted their everyday health behaviors early during the COVID pandemic may affect their physical and mental well-being. Even among persons who do not contract the disease, the effects of COVID-worry as well as public health orders to stay at home are associated with negative effects on physical and mental health.[1] Understanding the changes in lifestyle that older adults experienced during the first months of the pandemic provide an opportunity for nurses and healthcare providers to investigate associations among the common experiences (e.g. loneliness, social isolation) reported by older adults.

Early reports of high mortality rates among older adults with COVID-19 led to special warnings for careful adherence to stay-at-home orders by older adults. Age was identified early as a risk factor for morbidity and mortality related to COVID-19, and public health guidelines typically contained greater restrictions for older adults than any other age group.[2] Stay-at-home orders led to significant lifestyle changes for community-dwelling older adults,[3] with presumed impact on the everyday health behaviors of older adults and potential effects on physical and mental health. While restrictions were not targeted at older adults specifically, the day-to-day routines that provided socialization, even a trip to the grocery store, became limited.[2] The warnings were intended to heighten risk appraisals in hopes that greater risk appraisals would lead to strong adherence to stay-at-home orders and other protective behaviors (e.g., wearing masks, maintaining social distance).[2,3]

Indirect effects of the warnings may negatively affect physical and mental health by reducing self-care behaviors such as health self-care visits or self-care activities, or social isolation. Concerns about older adults postponing healthcare visits or reducing exercise were identified early as having potential long-term negative effects on both physical and mental health.[3]

Research reporting emotional distress of the pandemic has been conceptualized as Covid-19 distress.[4] Covid distress, when narrowly defined, is fear of COVID-19 infection, but research from previous pandemics indicates a broader set of symptoms, including worrying about supplies of needed items (e.g., toilet paper, hand sanitizer), seeking reassurance through media, increased contact with family, and symptoms of trauma, like problems with sleep.[4] Other researchers include anxiety, loneliness, and depressive symptoms, less physical exercise, and worse physical health in their assessment of COVID-19 distress, with 25% of older adults experiencing psychological distress after three months of social isolation early in the pandemic.[5]

In older adults, COVID-19 distress has been significantly associated with physical health by disrupting wellness routines, including

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managing medical and wellness appointments.[6-9] Negative mental health outcomes are associated with reduced rates of social participation due to social isolation during the pandemic,[4] as occurs during non-pandemic times.[7,8] When older adults experience emotional distress related to the pandemic, Taylor et al.[4] reported that respondents were less likely to reach out for provider health services, and more likely to use harmful strategies, like increased use of alcohol. Nurses are in the unique position to intervene on behalf of older adults who are at risk for physical and mental health concerns during the pandemic, as they have the opportunity to interact with older adults in acute, primary, and acute settings.

Activation of positive everyday health behaviors may mitigate mental health challenges during the pandemic, which indirectly has effects on physical health.[5,7,8] Two possible strategies that are investigated in this study are 1) following public health guidelines to reduce risk and 2) activating adaptive coping behaviors. Older adults have generally taken seriously the public health guidelines to engage in frequent hand washing, wearing masks, maintaining social distance, and avoiding public places.[3] The extent to which adherence mitigates distress about COVID-19 or other adverse changes in mental health has not been reported. Other coping strategies also have the potential for benefitting mental health under adverse conditions, including spiritual coping, pro-social outreach to others, and proactively ensuring that one's own needs are met by obtaining needed supplies. These could be conceptualized as everyday health behaviors that may have positive benefits for mental health even in the face of negative influences on mental health during the pandemic.

The present investigation reports on the extent to which a sample of county-wide older adults in the United States adjusted their everyday health behaviors in the first five months of their experience of the pandemic. This research reports the effects of three negative everyday health behavior changes that are common to life during the pandemic (changes in health service access, perceived negative effects of COVID-19 on health, and social isolation) as well as two positive everyday health behaviors (adherence to guidelines to reduce risk and adaptive coping behaviors) on physical and mental health and COVID-19 related distress.

Method and materials

Study population

This cross-sectional descriptive study utilized a telephone questionnaire asking about participants' COVID-19 experiences during June and July of 2020. Senior nursing students from a population health class, trained in the research protocols assisted faculty with recruitment and conducted phone surveys. Participants were recruited through research participant registries, email solicitations, online and hard copy advertisements, and city and county community agency networks serving older adults. The maximum attempts for participant contact by phone were three calls from a university or agency phone. The survey estimated to take on average 15–20 min to complete was used to collect the data. The survey was approved by the university's Institutional Review Board and a standard informed consent was obtained verbally prior to proceeding with the phone survey. Participation in the study was voluntary, and no formal compensation was provided. Participants completed self-reported demographics and measures of COVID-19 experiences. Informed consent and debriefing were presented at the beginning and at the end of the study, and qualitative comments were recorded if participants wanted to share additional information about their experiences.

Measures

The questionnaire asking about participants' COVID-19 experiences was adapted from a survey created specifically to investigate the impact of COVID-19 on older adults and their everyday health behaviors.[7] Cawthon et al. invited flexible use of the questionnaire at qaicpoa.com[7] so that collected data may be shared and harmonized in the future. Additional items inquiring about the influence of COVID-19 on participants' physical and mental health (self-perceived changes in hearing, vision, exercise, sleep, alcohol consumption, and depressive symptoms), along with basic demographics were included (see Table 1). Questions regarding changes in the potential for physical and/or emotional abuse, ability to stay home, end-of-life decisions, and caregiving roles were also added to the survey, but were not explored for the purposes of this study.

Demographics. Participants were requested to report gender, age, living situation, caregiver status, education level, race and ethnicity, and zip code.

COVID-19 Distress. One item was included to ask about participant's concern about the COVID-19 pandemic.[7] A second item was created for this survey to address the level of stress related to COVID-19. Both were scored on a Likert scale (0 = not at all to 2 = very). A mean composite score of the two items was computed where a higher score demonstrated greater COVID-19 distress experienced.

Mental Health Impact. Four items were utilized to inquire about changes participants experienced regarding sleep, depression, and alcohol consumption since the start of the COVID-19 pandemic. Sleep and alcohol consumption were included in this measure of mental health impact as they have been significantly associated with depression, anxiety, and stress during the pandemic.[4,10] Depression items were adapted from the Patient Health Questionnaire-2, asking whether the participants were experiencing little pleasure in doing things or feeling down and/or depressed.[12] Participants indicated the level of change they experienced using a Likert scale (0 = about the same to 2 = *a* lot). A mean composite score for mental health impact was calculated where greater ratings indicated higher levels of mental health change due to COVID-19.

Table 1
Sample Participant Characteristics (*N* = 126).

Measure	M	SD	n	%
Age (years)	73.21	7.40	–	–
Education (years)	14.73	2.73	–	–
Self-Perceived Health Status	1.94	0.73	–	–
Gender Male Female	– –	– –	43 83	34.1 65.9
Race White Black American Indian or Alaska Native Asian Native Hawaiian or Other Pacific Islander Unknown	– – – – – –	– – – – – –	113 10 1 0 0 2	89.7 7.9 0.8 0.0 0.0 1.6
Ethnicity Not Hispanic or Latino Hispanic or Latino Unknown	– – –	– – –	119 5 2	94.4 4.0 1.6
Living Situation Independent Assisted Living Facility	– –	– –	122 4	96.8 3.2
Living With Someone Alone	– –	– –	66 60	52.4 47.6
Caregiver Status No Yes	– –	– –	106 20	84.1 15.9

COVID-19 Experience. Two items asked if participants had been diagnosed with COVID-19 or knew someone who had been diagnosed with COVID-19 since the pandemic started.[7] Both questions were dummy coded (0 = no and 1 = yes) and summed to create a composite score that reflects COVID-19 experience for the participants (range 0–2). Higher numbers represented more COVID-19 experiences.

Health Changes. Four items were created to capture participants' changes in health due to COVID-19, such as variations in exercise, vision, hearing, and memory. All questions were dummy coded (0 = no change and 1 = experienced some sort of change) and a total sum composite score was analyzed (range 0–4). Exercise was included in this measure as there is a significant association between exercise and the overall health of older adults.[3,11] Higher scores implied that participants experienced more health changes related to COVID-19.

Health Service Access. Seven items inquired about participants' change in health service access due to COVID-19, such as cancelling or postponing a medical appointment, engaging in telehealth appointments, making an in-person visit to the clinic, and experiencing difficulties getting medications and food.[9] All questions were dummy coded (0 = no change and 1 = experienced some sort of change) and a total sum composite score was computed (range 0–7). Higher ratings suggested greater difficulties or changes experienced by participants regarding health service access due to COVID-19.

Social Impact. Four items adapted from Cawthon et al.[9] explored the social impact of the pandemic. Two questions addressed participants' change in social interactions due to COVID-19 by asking how the frequency of communication with family and friends had changed and how often participants communicated with family and friends. Two additional questions addressed feelings of isolation and lack of companionship. All questions were dummy coded (0 = no change and 1 = experienced some sort of change) and a total sum composite score was calculated (range 0–4). A higher score indicated a greater level of change experienced by participants regarding socialization since the stay-at-home mandate began.

Adaptive Coping Behaviors. Four items measured participants' adherence to public health safety guidelines related to COVID-19 such as wearing a mask, washing hands frequently, avoiding public places, and social distancing.[7] Adherence to guidelines was combined with 7 active coping behaviors participants used to respond to the pandemic: stockpiling food and/or water, praying and/or engaging in another spiritual practice, getting food and/or medicine for neighbors, donating blood, donating money, contacting friends and/or family to keep in touch, and providing childcare. All questions were dummy coded (0 = no and 1 = yes) and a total sum composite score was calculated (range 0–11). A higher total score indicated greater engagement of adaptive coping behaviors from participants in response to stay-at-home mandates.

Data analysis plan

All data analyses and statistics were computed using the IBM SPSS Statistics 26. Surveys and data were stored separately in locked drawers in a secured office. Each surveyor was well-trained, and there was no missing data due to the nature of the phone survey. Initial descriptive statistics were performed to characterize participants' pandemic experiences. Then, before investigating how different COVID-19 experiences, adaptive coping behaviors, and changes in health service access, socialization, and health were associated with overall COVID-19 distress and perceived mental health changes, correlations between these main variables of interest were calculated using Pearson's r. Bivariate correlations, independent t-tests, one-way analysis of change (ANOVA) were also utilized to see how sociodemographic factors are related to the main dependent variables of COVID-19 distress and the mental health impact of the pandemic. Finally, simple multiple regression equations were used to assess how COVID-19 experiences, changes in health service access, socialization and health, and coping behaviors predict COVID-19 distress and the mental health impact of the pandemic.

Results

Participant characteristics

A total of 126 older adult participants aged 60 and older (range: 60 to 94, M = 73.21, SD =7.40) residing in a county in southern Colorado participated in a survey of their COVID-19 experiences from June to July of 2020. Participants were majority female (n = 83, 65.9%), non-Hispanic (n = 119, 94.4%), White (n = 113, 89.7%), and non-caregivers (n = 106, 84.1%) who lived independently in the community (n = 122, 96.8%). On average, participants indicated some level of college education (M = 14.73, SD = 2.73; see Table 2).

COVID-19 distress and COVID-Related changes in health service access, and mental and physical health

Participants reported an average of 1.13 (SD = 0.51) on COVID-19 distress (possible range 0–2), implying they were concerned and/or stressed about the pandemic. Overall, most participants (91%) described being somewhat or very concerned about the pandemic, and 68% of participants reported being somewhat or very stressed. Only one participant (0.08%) reported being diagnosed with COVID-19 by a physician or other health care provider, and 20 participants (15.9%) described knowing a close friend or a family member to be diagnosed with COVID-19 as of the time of interview in June or July of 2020.

On average, participants made 2.22 (SD = 1.38) modifications to their health service access due to COVID-19 (e.g., canceling, postponing, or utilizing telehealth appointments and difficulties in obtaining medication and/or food). More specifically, 46% of participants canceled a physician (or other healthcare) appointment, and 14.3% postponed a visit. Health visits occurred by telehealth (51.6%) and in-person (47.6%). Other modifications with implications for health impact were difficulties with accessing food (27%) and medication since the beginning of the pandemic. Additionally, 29.4% of participants stated that they noticed changes in the way they think of end-of-life planning decisions after the start of the COVID-19 pandemic.

In terms of perceived physical and mental health changes, some participants reported noticing declines in their memory/thinking (8.7%), vision (9.5%), and hearing (7.1%), and 44 participants (34.9%) reported changes in their exercise routine since the pandemic began. Although means suggest that the overall sample showed little to no changes in depression (M = 0.29, SD = 0.46), sleep quality (M = 0.31, SD = 0.59), and alcohol use (M = 0.07, SD = 0.29), a substantial portion of the sample reported difficulties in these areas. For example, participants reported depressed mood (27%), loss of interest (21.4%), change in sleep quality (25.1%), and change in alcohol use (6.4%) since the start of the pandemic.

COVID-Related changes in social activity and coping behaviors

Socially, participants reported that they were engaging in approximately the same amount of communication with close friends and family since the pandemic began (M = 1.13, SD = 0.65) and that they engaged in contact several times a week (M = 3.04, SD = 1.08). Specifically, participants described changes in their frequency of contact with others (43.7%). Almost all participants (96%) stated that they have some contact with their loved ones since the beginning of COVID-19. Most of the participants were utilizing phone contact (94.4%), in-person contact (66.7%), texting (62.7%), and email (55.6%) to stay in-touch

Table 2
Questionnaire for Assessing the Impact of the COVID-19 Pandemic in Older Adults.

Question	Response
1. How concerned are you about the COVID-19 pandemic?	Not at all, somewhat, very concerned
2. Have you been diagnosed with COVID-19 by a physician or other health care provider?	Yes, No, I'm not sure
3. Has a close friend or family member been diagnosed with COVID-19?	Yes, No, I'm not sure
4. Do you feel stressed (feel emotion or physical tension) about the COVID-19 pandemic right now?	Not at all, somewhat stressed, very stressed
5, which of the following have you done in the last weeks to keep yourself safe from coronavirus (in addition to what you normally do?)	canceled a physician's (or other health care) appointment postponed a visit to the audiologist postponed a visit for a hearing check or hearing aid care visited a health care provider in person had a "telehealth visit" with a provider worn a face mask washed hands more than usual sanitized hands worked or volunteered from home canceled/postponed work, classes, or volunteer behaviors stockpiled food/water prayed or engaged in other spiritual practices avoided public places/crowds avoided in-person contact with friends and family (that you do not live with) avoided in-person contact with high-risk persons isolation from person(s) who live with me due to virus concerns canceled/postponed travel other:
6. Which of the following new actions are you taking to help your family, friends, or your community respond to the COVID-19 pandemic and social distancing rules?	Getting food or medicine for neighbors Donating blood Donating money Contacting friends or family to keep in touch Providing childcare Other
7. Compared to the months before the outbreak began, how has the frequency of your communication with close friends and family changed?	I communicate with them more often I communicate with them about the same I communicate with them less than before
8. How are you continuing to stay in touch with others?	Speaking in person By social media With phone calls By postal mail With video calls By texting By email Using Zoom, Skype, other
9. How often are you communicating with these other people?	Daily Several times a week Once per week 1–2 times in a month Rarely or never
10. Compared to the months before the pandemic began, has the quality of your sleep changed?	About the same as usual Somewhat A lot
11. Compared to the months before the pandemic began, have you been experiencing feeling down, depressed, or hopeless?	About the same as usual Somewhat more than usual A lot more than usual
12. Compared to the months before the pandemic began, have you been experiencing little interest or pleasure in doing things?	About the same as usual Somewhat more than usual A lot more than usual
13. Compared to the months before the pandemic began, have you noticed any decline in your memory or thinking?	Yes, No, I am not sure
14. Compared to the months before the pandemic began, have you noticed any decline in your vision?	Yes, No, I am not sure
15. Compared to the months before the pandemic began, have you noticed any decline in your hearing?	Yes, No, I am not sure
16. Compared to the months before the pandemic began, have you noticed any changes in the way you think of end-of-life planning decisions?	Yes, No, I am not sure
17. Compared to the months before the pandemic began, have you considered your ability to stay in your home during or after the pandemic ends?	Yes, No, I am not sure
18. Compared to the months before the pandemic began, have you felt more vulnerable to physical or emotional abuse?	Not at all, somewhat, A lot, Comment:
19. Compared to the months before the pandemic began, how has the frequency of your use of alcohol increased?	About the same as usual Somewhat A lot I do not drink alcohol
20. As a caregiver, who is providing YOU with some support during the pandemic	Not a caregiver Friend or family who comes by my place, Friend or family who I talk with on the phone/chat/text, someone I live with I do not have support
21. How much difficulty do you have obtaining the food you need because of the pandemic?	No difficulty Some difficulty Much difficulty
22. How much difficulty do you have obtaining the medicine you need because of the pandemic?	No difficulty Some difficulty Much difficulty
23. How often do you lack companionship during the pandemic?	Hardly ever, some of the time, often
24. How often do you feel isolated from others during the pandemic?	Hardly ever, some of the time, often

with others during the period of stay-at-home orders. Some participants experienced isolation (M = 0.64, SD = 0.70) and reported lack of companionship (M = 0.60, SD = 0.70) while at home; approximately half indicated that they felt isolated (51.6%) since the start of the virus and experienced lack of companionship (47.6%).

Adaptive coping behaviors were reported by most participants in this sample, including high rates of adherence to recommendations to wear a mask (99.2%), wash hands frequently (84.1%), avoid public places and crowds (86.5%), and avoid in-person contact with high-risk people (51.6%). To cope with the COVID-19 pandemic, 48.4% of participants engaged in spiritual practice, and 34.1% of participants stockpiled food and water for resource security. Many participants took new action to reach out to their family and friends to provide support for their loved ones while adhering to the social distancing guidelines. Participants were more likely to contact friends or family to stay in touch (92.1%) and less likely to donate money (29.4%), get food/and or medicine for neighbors (23.8%), provide childcare (8.7%), or donate blood (2.4%).

Correlations of health and mental health effects with COVID-Related changes

COVID-19 distress (concern and stress) was significantly correlated with mental health impact (r = 0.31), social impact (r = 0.39), and adaptive coping behaviors (r = 0.21). Mental health impact of COVID-19 was significantly correlated with health service access (r = 0.27), social impact (r = 0.33), health changes (r = 0.35), and adaptive coping behaviors (r = 0.32). Similarly, social impact of COVID-19 also demonstrated significant correlations with COVID-19 experience (r = 0.20), health service access (r = 0.25), health changes (r = 0.26), and adaptive coping behaviors (r = 0.27). All the correlations were small (see Table 3).

COVID-Related changes as predictors of health and mental health

Bivariate correlations, independent t-tests, and one-way ANOVAs revealed that age, gender, race, ethnicity, education, living situation,

Table 3
Correlations among Main Variables of Interest.

Measure	M	SD	Possible Range	1	2	3	4	5	6	7
1. COVID-19 Distress	1.13	0.51	0–2	1.00	0.31[a]	0.11	0.13	0.39[a]	0.17	0.21[b]
2. Mental Health Impact	0.24	0.33	0–2	–	1.00	0.13	0.27[a]	0.33[a]	0.35[a]	.32[a]
3. COVID-19 Experience	0.17	0.37	0–2	–	–	1.00	0.05	0.20[b]	0.09	.12
4. Health Service Access	2.22	1.37	0–7	–	–	–	1.00	0.25[b]	0.13	.11
5. Social Impact	2.39	1.04	0–4	–	–	–	–	1.00	0.26[a]	.27[a]
6. Health Changes	0.60	0.78	0–4	–	–	–	–	–	1.00	.15
7. Coping	5.57	1.65	0–11	–	–	–	–	–	–	1.00

[a] $p < 0.01$.
[b] $p < 0.05$.

caregiving status, and self-perceived health status were not significantly related to COVID-19 distress and mental health impact of the pandemic. Therefore, these sociodemographic factors were not included in the subsequent simple multiple regression analyses. Multiple regression predicting COVID-19 distress with predictors of COVID-19 experience, health service access, social impact, health changes, and adaptive coping behaviors was performed. The set of predictors explained 17.1% of the variance in COVID-19 distress, $F(5, 120) = 4.94$, $p < .001$. Specifically, having a greater social impact of the pandemic ($\beta = 0.35$, $p < .001$) significantly predicted higher levels of COVID-19 distress. COVID-19 experience, health service access, health changes, and coping did not attain significance in the model (see Table 4).

Additional multiple regression predicting the mental health impact of the pandemic with predictors of COVID-19 experience, health service access, social impact, health changes, and coping was estimated. The set of predictors explained 26.1% of the variance in mental health impact of COVID-19, $F(5, 120) = 8.46$, $p < .001$. Specifically, having greater changes in health service access ($\beta = 0.18$, $p < .05$) and health changes ($\beta = 0.25$, $p < .01$) and having higher levels of engagement in adaptive coping behaviors ($\beta = 0.21$, $p < .05$) significantly predicted greater mental health impact of COVID-19. COVID-19 experience and social impact did not uniquely influence the level of mental health impact in this model (see Table 5).

Discussion

Older adults were surveyed by phone during June and July of 2020, the fourth and fifth months of the pandemic in the United States, to gather their everyday experiences with life during the pandemic, including their strategies for staying well, their access to daily food and medication needs, health service access, and their frequency and methods of communications with family and friends. The study aimed to investigate the relationships among changes in health service access, health, and social isolation on COVID-19 distress and mental health in community-dwelling older adults. In addition, this study explored how adaptive coping behaviors (adherence to guidelines and intentional use of outreach activities) relate to mental health changes. For the purposes of this study, daily adherence to stay at home and CDC guidelines were combined with adaptive coping behaviors because these were considered everyday behaviors and because adherence behaviors align with positive coping behaviors. Other studies have separated adherence behaviors from common coping strategies.[13] However, problem-focused coping strategies (e.g., masking, avoiding crowds) could be included in adaptive coping behaviors used in everyday life.[14]

Table 4
Multiple Regression Analysis Predicting COVID-19 Distress.

Predictor	B	SE B	β
COVID-19 Experience	.03	.12	.03
Health Service Access	.01	.03	.03
Social Impact	.17	.05	.35[a]
Health Changes	.04	.06	.06
Coping	.03	.03	.10

[a] $p < 0.001$.

Distress and mental health changes

The community telephone survey revealed moderate levels of distress about the pandemic overall and perceived negative changes in mental health since the pandemic began. Most participants expressed some feelings of concern (91%) and distress (68%) despite relatively limited personal experience with COVID-19 (0.08% with a diagnosis, 15.9% close friend and/or family). In this study, COVID-19 distress was identified through two questions about concern and stress (Table 2), where stress included emotional or physical tension. Other research has narrower or broader definitions of COVID-19 distress, including changes in feelings of loneliness, sleep problems, or decline in self-care activities.[4,15-17] Previous research points to findings that older adults may be able to manage stress through adaptive approaches better than younger adults.[15,18] However, other research indicates that the combination of major restrictions in daily routines and behaviors coupled with the loss of routine communication and lack of companionship may overwhelm coping strategies for stress management during the pandemic.[17,19]

The mean perceived mental health changes appeared to be low, yet a substantial percentage of this sample were experiencing at least one mental health challenge. Depressed mood, loss of interest, and sleep changes were reported in approximately one-quarter of the sample. Findings of increased depressive symptoms and sleep changes are supported by previous research.[15,17] Older adult mental health needs during and after the pandemic are like natural disaster events, such as inability to access healthcare and challenges with supplies and assistance.[1,7,8]

Of note, a small number of participants (6.4%) reported a change in alcohol use (among those who used alcohol). Avery et al.[20] reported that there was a 14% increase in alcohol use among adults during the pandemic. In their pandemic study with a sample of 909 twin pairs from the Washington State Twin Registry, twins with higher levels of stress were more likely to report an increase in alcohol use, controlling

Table 5
Multiple Regression Analysis Predicting Mental Health Impact of COVID-19.

Predictor	B	SE B	β
COVID-19 Experience	.04	.07	.04
Health Service Access	.04	.02	.18[a]
Social Impact	.05	.03	.16
Health Changes	.11	.03	.25[b]
Coping	.04	.02	.21[c]

[a] $p < 0.05$.
[b] $p < 0.01$.
[c] $p < 0.001$.

for age and sex.[20] Given a reported general increase in unhealthy alcohol use in older adults over time, a change in alcohol use in this sample may be significant during the pandemic.[20-22]

Physical health changes were also reported—most notably, a reduction in the rate of exercise that over one-third of the sample noted. Reduced exercise is associated with lower mental health, as found in a cross-sectional study with 1046 older adults over the age of 50 in North America, in which participants who exercised regularly during the pandemic experienced lower depression-like symptoms.[3] While less than 10% of the sample noticed a reduction in cognition/memory, hearing, or vision, these findings are important given that noticed declines may not be part of normal aging.[23,24] Hearing and vision problems have been identified as related to depression[24,25] and predictive of cognitive performance decline.[23,24]

Everyday health behaviors: health service access

An area of growing concern for the future health of older adults is the impact of delays in access to routine health care.[26] Many participants (62%) reported that they had either canceled or postponed health visits. Adding to challenges with delays in the management of either new or chronic conditions, limiting physical activity, and possibly limiting access to healthy foods could negatively affect physical and mental health.[3,26] The significant disruptions in health care access represent possible delayed management of chronic conditions and could have created anxiety and depression for older adults who recognize the importance of ongoing health maintenance. In addition, stress is well known to contribute to the onset and the severity of mental health problems.[26] During the pandemic, new or exacerbated symptoms may remain undetected when health care visits are postponed or canceled.[26,27] This study did not attempt to identify participants with pre-existing mental health problems. It is possible that participants with pre-existing mental health problems prior to the pandemic may experience greater problems with their mental health than those without pre-existing conditions.[1,28]

Approximately one-half of participants reported continuing to use in-person and telehealth visits. While the outcomes of telehealth in acceptability and usefulness for older adults during the pandemic are being researched, early evidence suggests that telehealth use improves both physical and mental well-being.[29-31] Improved telehealth reimbursement rates and improved consumer access have enhanced older adults' ability to receive physical and mental health care, with satisfaction on the part of older persons who have been able to participate.[32] For those who did not use telehealth, a key question is whether the participants found it unacceptable or if they lacked access. Adults without internet access, those with vision or hearing disabilities, language barriers, or those without cognitive capacity will need multiple outreach methods to be included in telehealth care.[32]

Everyday health behaviors: social activity

Although focused on protecting people with higher risk of mortality and morbidity from COVID-19, the protections mandated by the CDC proved to isolate older adults in a way that may have been disempowering.[2,3] The findings of this study indicate that one-half of participants were feeling isolated or lacking companionship, higher than the general prevalence of 25% or lower during daily life.[4,33] This social isolation was a risk factor for heightened COVID-19-related distress, although it did not add to the other variables in predicting general mental health changes during the study months. Future research could explore the experience of the 16% of participants who were caregivers, less than one-half of whom reported sustained support from family/friends by phone or chat, which indicates that they may be carrying an extra burden of physical and mental health changes.[34]

Everyday health behaviors: adaptive coping behaviors

Participants demonstrated high levels of adherence to social distancing guidelines (e.g., mask-wearing, staying at home, avoiding public contact), reaching out and supporting friends, family, and others (e.g., increased contact, donating money, food), and practicing adaptive coping behaviors (e.g., stockpiling food, engaging in spiritual practices, outreach to others).

This outreach to others may be an unexpected positive factor that fosters resilience in mental health for older adults who were able to maintain relationships during the pandemic. Sustained contact may make more visible the shared experience of social isolation, which may improve the experience of connectedness during the pandemic.[35] In addition, the study sample learned technologies like Zoom and social media and expanded their outreach with text and e-mail. Nimrod[16] reported that older adults increased their use of the internet during the COVID-19 pandemic as a positive coping strategy. The rates of ongoing physical contact in some participants were surprising in a sample with such high rates of adherence to other aspects of public health guidelines. To sustain social contact, older adults in this study could have put themselves at risk by not isolating themselves at home from loved ones who may have been exposed to the virus or as part of their active coping by outreach outside the home.

Everyday health behaviors, mental health, and COVID-19 distress

Regression analysis described the unique contribution of each variable to COVID-19 distress and mental health change. While correlational analysis revealed a significant relationship between COVID-19 distress and mental health impact, predictor variables differed.

Greater negative social impact was associated with higher levels of COVID-19 distress. Changes in communications with family and friends, isolation, and lack of companionship were most salient in older adult experiences of stress. Social distancing has amplified feelings of disconnect and separateness from sources of support and the community[1,15] in a sample of older adults who were highly adherent to social distancing recommendations. Outreach by family, public health providers, nurses in acute and community care should follow up on communication needs and perceived social isolation.

In terms of mental health impact, social impact was not a significant predictor variable. However, regression analysis indicated that the changes in health appointments (e.g., cancelation, delays, telehealth), difficulties with obtaining medications and food, and health changes (e.g., less exercise, increased alcohol use, sensory or cognitive changes) were significant factors related to mental health impact.

Engagement in adherence to restrictions and adaptive coping behaviors also contributed to mental health impact. The heightened concern to adhere to social distancing guidelines may have empowered older adults to take steps to prevent getting the virus or spreading it to others.[36] Outreach to others, including providing support by phone or email or providing money or food to others provides a sense of belonging or "being in this together."[33,36] In addition, spiritual practices are well known to help individuals cope during stressful times, especially older adults.[37] Helping older adults put together an outreach plan could be beneficial during times of social isolation, both during and after the pandemic.[6,33]

Limitations and future directions

Limitations of the current study should be noted. First, the sample was not nationally representative. Stay-at-home orders can vary by county and by state, so the experiences of older adults in other regions could differ. This convenience sample is biased toward those who were adhering to public health guidelines more universally than has been reported for the public at large, and it was composed of

predominately white and well-educated older adults who may have had better access to technology and resources compared with other groups of older adults. They may have had opportunities for resilience that others lacked during the pandemic. The study design was cross-sectional, so is limited to reporting associations among variables at a single point in time rather than predictions of how everyday health behavior changes may predict mental health over time. The survey questions were designed for efficiency in telephone interviews and were not standardized measures of the constructs.[7]

However, the findings of this study provide insight into the extent that older adults adjusted to the daily experience of stay-at-home orders during the pandemic and the resulting changes to their overall mental health. The prevalence of social isolation and loss of companionship provides opportunities for primary and public health providers, including nurses to screen for mental health status and refer to providers and community service organizations. Data from this study may be compared with other populations sampled using the Cawthon[7] survey. There is a need for longitudinal studies with larger and more diverse groups of older adults, including those who may have increased risk for poorer health outcomes associated with COVID-19 stress and mental health impact. Such research may provide information about mitigation strategies to support the mental health of older adults and may be useful in informing public health work in preparation for future pandemics.

Conclusions

The effects of deferred healthcare could have long-term physical and mental health impacts on older adults. Research should differentiate community older adult population subgroups who are at higher risk for poorer physical and mental health outcomes from those who are resilient during and following the COVID-19 pandemic. Health providers and nurses could partner with community service agencies to assist in the detection of physical and mental health deficits related to the pandemic, and provide guidance for referral and support. Finally, older adults seem willing to utilize telehealth; health care providers can explore multiple avenues to deliver health services to those who do not have access to the internet or sophisticated technologies. At a policy level, health providers, including nurses, should advocate for meaningful policy changes that strengthen community partnerships to strengthen the physical and mental health of older adults.

Declaration of Competing Interest

The Authors declare that there is no conflict of interest.

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