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Brief Report

Changes in Internet Use When Coping With Stress: Older Adults During the COVID-19 Pandemic

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ABSTRACT

Objective: To explore older people’s use of the Internet for coping with stress posed by the COVID-19 pandemic. Methods: An online survey with a random sample of 407 Internet users aged 60 years and over (Mean = 69.14). Results: Participants reported a significant increase in 7 of 12 Internet-based functions following the pandemic onset. Stress levels were moderate-to-high and participants appeared more worried about others than about themselves. Significant positive associations were found between stress and increase in Internet use for interpersonal communication and online errands. Linear regression analysis revealed a significant negative association between stress and subjective wellbeing, but it was only increased Internet use for leisure that associated significantly with enhanced wellbeing. Conclusion: The changes in Internet use clearly reflected coping efforts that were apparently ineffective in enhancing wellbeing. Paradoxically, the only online functions that could improve wellbeing, Internet use for leisure, are precisely those whose use hardly increased. (Am J Geriatr Psychiatry 2020; 28:1020−1024)

INTRODUCTION

The onset of the COVID-19 pandemic has placed humanity in an unprecedented situation, wherein billions of people throughout the world found themselves confined to their homes due to stay-at-home orders and/or self-sequestering. Most everyday activities were restrained and online activity became the new reality. As the pandemic posed a particular threat to older adults, much public debate concentrated on means that may support their physical and mental health during long periods of isolation. This discourse brought the topic of older adults’ use of the Internet to the center stage.

Recent research indicates that in countries with advanced economies, such as the United States,
Canada, and Western European states, a majority of older adults use the Internet, but they typically lag behind younger cohorts insofar as their digital skills are concerned. Their ability to adjust their Internet use in a manner that will support their daily life in the new realities engendered by the pandemic was thus unclear. Moreover, while studies on young adults suggested that they cope with stressful life conditions by using the Internet for mood management and social support, older users’ ability to harness the Internet for coping with pandemic-induced stress was uncertain.

In the past two decades, numerous studies explored the impact of Internet use on Subjective Wellbeing (SWB) in later life. Some of their contrasting findings revealed no impact whatsoever, while others uncovered negative effects. The majority, however, demonstrated an overall positive association between Internet use and SWB in old age and some even demonstrated causality. Recent studies argued that the contribution to SWB depends on the type and purpose of use. Delineating three distinct purposes common among older users (communication, information, and task performance), one study found that all three indirectly impacted SWB via increased social engagement. Another study, however, examined leisure in addition to the above three purposes and showed that after controlling for sociodemographic variables, only leisure uses (enjoyable online activities such as games, music, films, hobbies, blog writing, and many more) associated significantly with SWB.

Considering the stressful and constraining conditions in which older adults around the globe found themselves following the onset of the COVID-19 pandemic, the present study aimed at answering the following questions:

1. Have older Internet users changed their use patterns following the pandemic onset?
2. Do these changes associate with stress caused by the pandemic?
3. If so, to what extent did these changes contribute to users’ SWB?

Answering these questions enabled evaluation of older users’ ability to use the Internet effectively in coping with stress.

METHODS

The study was based on an online survey of 407 Israeli Internet users aged 60 years and over, conducted in April 2020 during the fourth week of general lockdown. Study participants were randomly sampled from an online panel of 50,000 Internet users. Their ages ranged from 60 to 84 (mean = 69.14, standard deviation[SD] = 5.14); 50.6% were men, 72.2% married, and 94.8% had children (mean = 2.74, SD = 1.41). Seventy-seven percent had some postsecondary education, 35% reported having a higher than average income, 59.5% were retirees, 49% resided in a big city, 65.6% were native-born, and 73.5% described their health as “pretty good” or “very good.”

Participants were contacted via email with a link to the survey. The questionnaire (see the first two parts in Appendix A) included mostly closed-ended questions regarding the following topics:

1. Changes in Internet use: Participants were presented with a list of 12 Internet-based functions: 3 associated with interpersonal communication (emails, chat software, and social networking services), 4 with information (online newspapers, television and radio, reading entries in blogs, forums etc.), 1 with task performance and 4 with leisure (games, downloading content, websites related to hobbies, writing entries in blogs, forums etc.). The participants were asked to report the extent to which their use of each function had changed following the onset of the COVID-19 pandemic on a scale ranging from 1 (“a lot less”) to 5 (“a lot more”).

2. Stress resulting from the COVID-19 pandemic: An 8-item scale measuring stress resulting from the pandemic referred to 3 potential reasons for stress: Immediate threats (infection, isolation, and economic strain), long-term threats (deteriorated physical health and/or mood following prolonged lockdown) and worrying about others (infected friends, infected relatives, and family economic strain). Participants were asked to rank their level of worry with each item on a 5-point Likert scale (Cronbach’s alpha = 0.881).

3. SWB: Participants evaluated their wellbeing according to the Satisfaction With Life Scale.
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(SWLS), comprising 5 statements ranked on a 5-point Likert scale (Cronbach’s alpha = 0.869).

4. Personal background: The background questionnaire explored sex, age, marital status, number of children, education, monthly income, work status, place of residence, place of birth, and perceived health.

Descriptive statistics were used to examine changes in Internet use, and a linear regression analysis was performed with the number of increased uses as the dependent variable and all background characteristics as the independent variables. Next, COVID-19 stress score was computed for each participant by averaging the rankings of the various items as a whole and per stressor. Paired-sample t tests were applied to explore differences in the level of each stressor. Pearson’s correlations were then used to assess the associations between changes in Internet use and level of stress. This was done for the average change in each use type (communication, information, task performance, and leisure) as well as for each online function separately. In the final stage of analysis, a life satisfaction score was computed for each participant by summing up the rankings of the five SWLS items, and a linear regression analysis was performed with SWLS score as the dependent variable and general stress score, changes in Internet use and all background characteristics as the independent variables. Data were analyzed using SPSS v.26 software, with a confidence interval of 95% in all tests.

**RESULTS**

Participants’ reports indicated a significant increase in Internet use following the onset of the pandemic. In 7 of the 12 Internet-based functions, the rate of persons reporting increased use (“more” or “a lot more”) was significantly higher than those reporting decreased use. The largest increases were in use of chat software such as Zoom, Skype, or WhatsApp (64.1%), online errands such as shopping, financial management or medical appointments (41.7%), online newspapers (40.8%), social networking services (40.1%), and websites related to hobbies and interests (36.6%).

The average number of Internet functions in which use increased was 3.52 (SD = 2.78). Linear regression analysis indicated that two background characteristics predicted greater number of increased uses: High income (beta = 0.123, t = 2.302, df = 396, p = 0.022) and residence in a big city (beta = 0.168, t = 3.385, df = 396, p = 0.001). The variance explained by this regression, however, was very low (R square = 0.066, F score = 2.365, df = 10,396) indicating that other variables (e.g., digital literacy) could probably provide a better explanation.

Study participants’ stress scores were largely distributed normally (skewness = −0.150, standard error [SE] = 0.121; kurtosis = −0.577, SE = 0.241), ranging between 1.13 and 5.00 with a mean of 3.34 (SD = 0.89), indicating moderate-to-high levels of stress. Examination of each stressor separately showed that the scores for worrying about others were highest (Mean = 3.61, SD = 0.93), followed by immediate threats (Mean = 3.30, SD = 0.96), and long-term threats (Mean = 2.98, SD = 1.16). A series of paired-sample t tests indicated that the differences between each set of means were significant (df = 406, p = 0.001 in all three tests).

The use of Pearson’s correlations revealed significant positive associations between stress and increased Internet use for interpersonal communication (r = 0.162, p = 0.001, N = 407) and online errands (r = 0.139, p = 0.005, N = 407). Although significant increases in use of certain information (e.g., online newspapers) and leisure (e.g., hobbies) functions were reported, no associations were found between these function types and stress. Examining each function separately confirmed these results.

The revealed associations suggested that increase in use of certain Internet functions is a strategy for coping with stress. To test the usefulness of this coping strategy, the associations among stress, changes in Internet use and SWB were tested while controlling for background variables by applying a linear regression (Table 1). Study participants’ SWLS scores were largely distributed normally (skewness = −0.395, SE = 0.121; kurtosis = 0.207, SE = 0.241), ranging between 5 and 25 with a mean of 17.19 (SD = 3.93), indicating moderate-to-high levels of SWB. Higher levels of SWB were associated with being married, having more children, having a high income and being healthy. Most importantly, analysis indicated a significant negative association between stress resulting from the pandemic and SWB, but none of the strategies associated with greater stress (i.e., communication and task performance) predicted...
SWB. In fact, the only increase in use that significantly associated with enhanced SWB was the use of the Internet for leisure. The magnitude of the effects was relatively small and the overall regression model accounted for 24.6% of the variance. This indicates that other variables, that were not examined in the model, may well provide a better explanation of SWB in stressful circumstances. Nevertheless, the significant association found between SWB and more Internet use for leisure as well as the lack of significant associations between SWB and more use for communication and task performance have theoretical and practical implications, as discussed below.

**DISCUSSION**

Study participants were certainly stressed by the threats and constraints resulting from the COVID-19 pandemic, but were more worried about their families and friends than they were about themselves. They thus appeared to maintain a relative sense of control over their own conditions and actions, but were stressed by situations they could do little about. Additionally, they were more worried about immediate threats than about potential long-term risks.

Participants’ reports indicated significant increase in Internet use following the pandemic onset. Greater increase in Internet use was reported by persons with higher income and by residents of big cities, a finding that may be explained by the fact that the Israeli state’s efforts of reinforcing the stay-at-home orders focused on big cities, whereas residents of small cities and rural localities could still enjoy relative freedom. The observed associations between level of stress and some changes in Internet use suggest that these changes reflect coping efforts. By increasing their online interpersonal communication, participants may have sought emotional support, as well as some measure of supervision over other people’s conditions; moreover, they may have been performing more errands online to decrease the risk of infection. These findings indicate that although they typically have fewer digital skills, older persons use the Internet for coping with stressful conditions in a manner that resembles that of young adults.

Their coping strategies, however, did not seem to be effective in enhancing their SWB during the COVID-19 pandemic. None of the changes in Internet use that associated with more stress (i.e., communication and task performance) predicted SWB. Only the increase in use of Internet leisure functions significantly associated

**TABLE 1. COVID-19 Stress, Changes in Internet Use, and Background Variables Associated with SWB: A Linear Regression Analysis (N = 407)**

| Unstandardized Coefficients | Standardized Coefficients | t     | Sig. |
|-----------------------------|---------------------------|-------|------|
|                             | B          | Std. Error | Beta     |       |
| (Constant)                  | 11.101     | 3.400       |         | 3.265 | 0.001 |
| Total stress score          | -0.484     | 0.211       | -0.110* | -2.293| 0.023 |
| Online communication        | -0.114     | 0.327       | -0.019  | -0.347| 0.728 |
| Online information          | -0.011     | 0.416       | -0.002  | -0.027| 0.978 |
| Online errands              | 0.168      | 0.205       | 0.043   | 0.819 | 0.413 |
| Online leisure              | 1.179      | 0.393       | 0.198** | 2.997 | 0.003 |
| Sex                         | -0.586     | 0.375       | -0.049  | -1.055| 0.301 |
| Age                         | 0.060      | 0.037       | 0.078   | 1.601 | 0.110 |
| Marital status              | 1.778      | 0.432       | 0.203***| 4.114 | 0.001 |
| # of children               | 0.423      | 0.128       | 0.152** | 5.294 | 0.002 |
| Education                   | 0.011      | 0.072       | 0.007   | 0.149 | 0.882 |
| Income                      | 1.017      | 0.401       | 0.124*  | 2.538 | 0.012 |
| Employment status           | -0.356     | 0.400       | -0.043  | -0.891| 0.374 |
| Place of residence          | -0.183     | 0.355       | -0.023  | -0.514| 0.607 |
| Place of birth              | -0.031     | 0.376       | -0.004  | -0.082| 0.935 |
| Self-rated health           | -1.017     | 0.256       | 0.202***| -4.310| 0.001 |

Notes. R square = 0.246, F score = 8.506, df = 15, 391. Dummy codes. Sex: 0 = male, 1 = female; Marital status: 0 = not married, 1 = married; Income: 0 = average or below, 1 = above average; Employment status: 0 = not working (retiree or unemployed), 1 = working (part time or full time); Place of residence: 0 = other, 1 = big city; Place of birth: 0 = immigrant, 1 = native-born.

*p < 0.05.

**p < 0.01.

***p < 0.001.
with SWB; the extent of this positive association even exceeded the negative impact of pandemic-induced stress. This finding is consistent with an extensive corpus of literature showing that involvement in leisure activities has a significant impact on older adults’ well-being.10 It also supports the above-noted study6 indicating that of the four Internet functions common among older adults, only leisure uses associate significantly with SWB.

Overall, the findings pointed to a paradoxical situation, according to which the potentially most beneficial change in Internet use for coping with stress is the one carried out least. The only leisure use that increased significantly was visiting websites related to hobbies and interests, whereas activities such as playing digital games, downloading content (e.g., films and music), writing blogs and so forth hardly changed and even decreased. To promote the wellbeing of older Internet users who are confined to their homes, practitioners working with this population should encourage them to render their digital lives more recreational in nature.

AUTHOR CONTRIBUTIONS

Galit Nimrod is responsible for the entire manuscript.

DISCLOSURE

The author declares having no conflict of interests.

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SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found, in the online version, at https://doi.org/10.1016/j.jagp.2020.07.010.

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