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Extension's Use of Zoom to Address a Public Health Risk Among Older Adults

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Abstract. Mandates that require social distancing and sheltering-in-place to stop the spread of the coronavirus have worsened an already concerning public health issue for older adults –social isolation and loneliness. Alabama Extension System at Alabama A&M University developed a program focused on helping older adults connect with family and friends. A descriptive study of 37 older adults indicated that their knowledge, ability, and comfort with implementing Zoom sessions increased significantly after completing the program. Findings show the potential use of the Zoom for Seniors program in preventing social isolation or loneliness among older adults.

INTRODUCTION

On January 30, 2020, the World Health Organization (WHO) officially declared a worldwide public health emergency due to the coronavirus. Months later, this virus continues to be one of the world's most significant challenges. Although this pandemic affects all aspects of life, some populations are affected more than others. Older adults, for example, face a far more significant challenge than younger people. Data consistently show that older adults are at a higher risk of hospitalization and death due to COVID-19 (Center for Disease Control and Prevention [CDC], 2022). Although individuals over 60 are at a far greater risk than those under 60, individuals 85 or older face the greatest risk (CDC, 2021). According to the CDC (2020), adults 65 years and older make up 80% of all COVID-19 related deaths in the United States.

Politicians and community leaders have put in place various policies and procedures, both national and state-mandated, to stop or slow the spread of the coronavirus. The CDC and other agencies have consistently provided research-based information on things that individuals can do to slow or stop the virus's spread. One of the most effective strategies for older adults is to distance themselves from others—a practice referred to as social distancing. Yet social distancing contributes to a rise in another health issue for older adults: social isolation or loneliness. According to the CDC (2020), social isolation is a lack of social connections that can lead to loneliness in some older adults. However, social isolation does not guarantee loneliness, because some individuals may feel alone even when they are not socially isolated. Stiles (2020) indicated that social distancing could exacerbate the existing issue of social isolation among older adults. Research consistently supports the value of social relationships in maintaining the mental and physical health of older adults (Ong et al., 2015). Some researchers suggest that the health risks associated with social isolation for older adults are similar to those of high blood pressure, smoking, and obesity (Singer, 2018; National Academies of Sciences, Engineering, and Medicine, 2020). The CDC (2020) and the National Coalition on Mental Health and Aging ([NCMHA], 2020) also note that loneliness and social isolation in older adults are serious public health issues that can put older adults at a higher risk for dementia, heart disease, mental health issues, and other severe medical conditions. Singer (2018) concludes that efforts geared towards connecting older adults to others provide various health benefits; these efforts are cost-effective for the overall health care system.

The demand for older adults to socially distance, as well as the related health concerns, have caused many individuals, families, and organizations to seek ways to keep these seniors socially connected. One of the many strategies employed in this pursuit is the use of electronic communication plat-

forms. Such platforms allow individuals to not only talk with one another but to see and participate in activities together as well. Although such electronic communication platforms can allow older adults to stay connected with others, navigating such platforms might pose a challenge for older adults. According to some research, older adults not only face barriers to learning a new technology, but they are also usually slow to adopt new technology (Li et al., 2021; Van Jaarsveld, 2020).

Alabama Extension System at Alabama Agricultural and Mechanical University (AAMU) offers free online Zoom classes to older adults in order to address the nationwide issues of loneliness and social isolation among our seniors. The purpose of the program is to equip older adults with the necessary skills to stay socially connected and thereby improve their overall well-being, especially during the pandemic.

The overall objectives of this study were to determine if the program increased older adults':

1. understanding of how to connect with family and friends virtually,
2. ability to connect with family and friends using an electronic communication platform, and
3. confidence in using an electronic communication platform to connect with family and friends.

METHODOLOGY

PARTICIPANTS

We advertised the Zoom program through social media and the Alabama Extension website. During a two-month period, 57 individuals self-selected to participate in the program by registering for the program using a Zoom link or a Quick Response (QR) code. Of the 57 individuals who completed the program, 81% (n=46) submitted both a pretest and posttest. Of the 46 returned surveys, only 37 were usable.

Sixty-five percent of participants were 61 years of age or older. Only 11% of respondents were 50 or younger. Of the participants who responded, 81% were females. Almost two-thirds (65%) were Black, 15% White, and 16% did not respond to the question. The majority were graduates of a college or university (70%), while 16% had some college/university experience.

DESIGN

A Pretest-Posttest nonexperimental research design was utilized in carrying out this study. This study analyzed the "Zoom for Seniors" program. Data from this 3-day online program were collected in July and August of 2020 through the Alabama Extension System at Alabama A&M University. The program consisted of three 2-hour sessions that taught older adults how to utilize an online communication platform (Zoom) while sheltering in place. The program was taught and evaluated online by AAMU's Family and Finance Urban Regional Agents.

SURVEY

The authors developed a pretest and posttest survey using Qualtrics. Two university professors with expertise in both evaluation and working with older adults assessed the surveys for face and content validity. After developing the instruments, we obtained approval from our Institutional Review Board (IRB#2020–022).

The surveys consisted of two sections. Section 1 consisted of four questions about demographics. The demographic questions included age, gender, race, and education level. Section 2 included nine questions for older adults to indicate their level of understanding, their ability, and their level of comfort pertaining to participating in Zoom sessions, hosting Zoom sessions, and using Zoom sessions to stay connected to others. Participants were asked to indicate their level of understanding, ability, and comfort on a scale ranging from 0 to 5 where 0 indicated no understanding, ability, or comfort and 5 indicated a high level of understanding, ability, or comfort using Zoom.

DATA COLLECTION PROCEDURES

At the start of the first session of the program and at the end of the last session of the program, participants were given access to the pretest surveys via a link or a QR code. We discussed the purpose of each instrument and explained the study's anonymity. We obtained verbal consent from all participants who responded. We also told participants of the survey's volunteer nature and that accessing the survey link indicated their consent to participate in the study. Likewise, written instructions on each survey indicated the procedure for consent and the volunteer nature of exiting the survey at any given point.

DATA ANALYSIS

We used descriptive statistics to analyze demographic data and paired-sample t-tests to access differences in participants' understanding, ability, and confidence level using Zoom. To calculate the effect size, we used the Eta squared statistic. We based interpretation of the effect size on Cohen's (1988) suggested benchmarks of 0.2 (small), 0.5 (medium), and .08 (large).

RESULTS

WITHIN-GROUP DIFFERENCES

Understanding/Knowledge

Overall, there was a significant increase in respondents' understanding of Zoom from the start of the program

(M = 2.84, SD = 1.46) to its completion (M = 5.26, SD = .69), t(36) = - 10.68, p <.0005. The mean increase in overall understanding was -2.42 with a 95% confidence interval ranging from -2.88 to -1.96. The eta square statistic (.76) indicated a large effect size (see Table 1). Respondents, on average, had a significantly greater understanding of how to participate in a Zoom session (M = 3.30, SD = 1.47; M = 5.49, SD = .65), t(36) = -9.19, p <.0005 and how to host a Zoom session (M = 2.54, SD = 1.68; M = 5.14, SD = .89), t(36) = -9.72, p < .0005 after participating in the program. The mean increase in respondents' understanding of how to participate in and host a Zoom session was -2.19 and -2.60 with a 95% confidence interval ranging from -1.71 to -2.67, and from -3.14 to -2.05, respectively. The eta square statistics (.70 and .72) indicated large effect sizes. Likewise, respondents' understanding of how Zoom can be used to stay connected to family and friends was significantly greater after completing the program (M = 5.16, SD = .83) than when starting the program (M = 2.68, SD = 1.56), t(36) = -10.46, p < .0005. The mean increase in knowing how Zoom can help keep one connected was -2.49 with a 95% confidence interval ranging from -2.97 to -2.00. The effect size indicated by the eta square statistics was large.

These results suggest that the Zoom for Seniors program has an impact on participants' understanding. Specifically, the results suggest that participation in the Zoom for Seniors program increases one's understanding of how to participate in a Zoom session, host a Zoom session, and use Zoom to stay connected to family and friends.

Ability

Similarly, there was a significant increase in respondents' ability to use Zoom from starting the program (M = 2.79, SD = 1.41) to completing the program (M = 5.27, SD = .79) t(36) = -11.23, p<.0005. The mean increase in respondents' overall ability to use Zoom was -2.48 with a 95% confidence interval ranging from -2.92 to -2.03. The eta square statistic of .78 indicated a large effect size (see Table 2). After completing the program, respondents' ability to participate in Zoom sessions was significantly higher (M = 5.41, SD = .87) than before participating in the program (M = 3.30, SD = 1.51), t(36) = -7.87, p < .0005. The mean increase in their ability was -2.11 with a 95% confidence interval ranging from -2.65 to -1.57. The eta square statistic (.63) indicated a large effect size. Respondents' ability to host Zoom sessions also increased significantly (M = 2.53, SD = 1.59; M = 5.22, SD = .83), t(35) = -10.72, p < .0005, and their ability to use Zoom to connect with others increased significantly (M = 2.59, SD = 1.54; M = 5.22, SD = .85), (t(36) = -10.79, p < .0005 after completing the program. The mean increase in respondents' perceptions of their ability to host Zoom sessions and use Zoom to stay connected with others were -2.69 and -2.62

Table 1. Descriptive Statistics and T-test Results for Understanding

Variable	Pretest		Posttest		95% CI for Mean Difference	Mean Difference			
	M	SD	M	SD			*t*	*df*	η^2
Understand how…									
to participate in Zoom session.	3.30	1.47	5.49	.65	-2.67, -1.71	-2.19	-9.19	36	.70
to host a Zoom session.	2.54	1.68	5.14	.89	-3.14, -2.05	-2.60	-9.72	36	.72
Zoom can help connect with family and friends.	2.68	1.56	5.16	.83	-2.97, -2.00	-2.49	-10.46	36	.75
Overall	**2.84**	**1.46**	**5.26**	**.69**	**-2.88, -1.96**	**-2.42**	**-10.68**	**36**	**.76**

Table 2. Descriptive Statistics and T-test Results for Ability

Variable	Pretest		Posttest		95% CI for Mean Difference	Mean Difference			
	M	SD	M	SD			*t*	*df*	η^2
Ability to…									
participate in Zoom session.	3.30	1.51	5.41	.87	-2.65, -1,57	-2.11	-7.87	36	.63
host a Zoom session.	2.53	1.59	5.22	.83	-3.21, -2.18	-2.69	-10.72	35	.77
use Zoom to connect with family and friends.	2.59	1.54	5.22	.85	-3.12, -2.13	-2.62	-10.79	36	.76
Overall	**2.79**	**1.41**	**5.27**	**.79**	**-2.92, -2.03**	**-2.48**	**-11.23**	**36**	**.78**

Table 3. Descriptive Statistics and T-test Results for Confidence Level

Variable	Pretest		Posttest		95% CI for Mean Difference	Mean Difference			
	M	SD	M	SD			*t*	*df*	η^2
Confidence with …									
participating in Zoom session.	3.14	1.64	5.53	.74	-2.93, -1.85	-2.39	-9.01	35	.70
hosting a Zoom session.	2.54	1.70	5.26	.82	-3.30, -2.13	-2.71	-9.50	34	.73
using Zoom to help connect with family and friends.	2.86	1.61	5.26	.78	-2.92, -1.88	-2.40	-9.35	34	.72
Overall	**2.85**	**1.48**	**5.36**	**.74**	**-3.00, -2.02**	**-2.51**	**-10.44**	**35**	**.76**

with a 95% confidence interval ranging from -3.21 to -2.18 and from -3.12 to -2.13, respectively. Both eta square statistics (.77 and .76) indicated large effect sizes.

Results suggest that the program has an impact on participants' ability to use Zoom. More specifically, results indicate that participation in the Zoom for Seniors program increases one's ability to participate in Zoom sessions, host Zoom sessions, and use Zoom to stay connected with family and friends.

Confidence

Overall, respondents had a significantly higher level of confidence at the completion of the program (M = 5.36, SD = .74) than at the start of the program (M = 2.85, SD = 1.48) t(35) = -10.44, p <.0005. As shown in Table 3, the mean increase in their overall confidence level was -2.51 with 95% confidence interval ranging from -3.00 to -2.02. The eta squared statistic of .76 indicated a large effect size. Respondents' levels of confidence with participating in Zoom sessions was significantly higher after completing the program (M = 5.53, SD = .74) than at the start of the program (M = 3.14, SD = 1.64), t(35) = -9.01, p < .0005. The mean increase in confidence with participating in Zoom sessions was -2.39 with a 95% confidence interval ranging between -2.93 and -1.85. The eta statistic (.70) indicated a large effect. Respondents' confidence with hosting Zoom sessions also increased significantly (M = 2.54, SD = 1.70; M = 5.26, SD = .82) t(34) = -9.50, p < .0005 after completing the program. The mean increase was -2.71 with a 95% confidence interval between -3.30 and -2.13. This denoted a large effect size (.73). Similarly, respondents were significantly more confident using Zoom to connect with others at the completion of the program (M = 5.26, SD = .78) than at the start of program (M = 2.86, SD = 1.61), t(34) = -9.35, p < .0005. The mean increase confidence level was -2.40, with a 95% confidence interval ranging from -2.92 to -1.88. The eta squared statistic (.72) indicated a large effect size.

The results suggest that the program has an impact on participants' confidence. They also suggest that participation in the program increases one's confidence in how to participate in, host, and use Zoom to connect with others.

CONCLUSION

Programming that helps older adults deal with social isolation and loneliness can improve their health and longevity (National Institute on Aging, 2019). Our findings indicated that the Zoom for Seniors program significantly improved older adults' understanding, ability, and confidence in the use of Zoom.

Results suggest that the program can help older adults use technology to stay socially connected, especially during the pandemic. Because social isolation and loneliness are linked to severe health conditions in older adults, Extension programming that assists older adults in staying connected socially can help reduce social isolation. Our program supports the findings of others that suggest the need for the use of virtual social platforms as a strategy for keeping individuals socially connected to prevent serious yet unrecognized potential public health risks for older adults (Call, 2020). Similarly, our findings support the efficacy of these programs in helping older adults learn new technologies (Das et al., 2015; Franzen-Castle et al., 2017). Results from this study also suggest that the program successfully taught older adults how to use Zoom. This suggests that older adults may also benefit from similar trainings focusing on other communication technologies that may help prevent social isolation and loneliness. It also suggests that all Extension educators working with adults should adopt this program or a program like this one.

However, one limitation of this study is that participants' level of knowledge, ability, and comfort with using a communication platform may be low due solely to Internet or broadband issues. Interruptions and delays can cause a great deal

of stress, frustration, and anxiety for older adults learning new technology. Unfortunately, this study did not investigate such issues.

Regardless of COVID-19 or the program area, Extension educators, in the future, should actively seek ways to help older adults learn how to use communication platforms to stay socially connected with others. To better serve older adults in Alabama, further investigation is recommended to incorporate some qualitative questions into the survey to determine the causes for lack of success in using a communication platform.

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