

Utilizing Technology to Promote Healthy Lifestyles Among Romanian Seniors

An Interactive Qualifying Project Proposal submitted to the faculty of
WORCESTER POLYTECHNIC INSTITUTE
In partial fulfillment of the requirements for the
Degree of Bachelor of Science

By:

Mary Braen

Thomas Ciolfi

Kyle Lopez

Date:

March 6, 2022

Report Submitted to:

Roxana Molocea

Fundația Regală Margareta a României

Professor Althea Danielski

Professor Emeritus Robert Kinicki

Worcester Polytechnic Institute

This report represents work of WPI undergraduate students submitted to the faculty as evidence of a degree requirement. WPI routinely publishes these reports on its web site without editorial or peer review. For more information about the projects program at WPI, see <http://www.wpi.edu/Academics/Projects>

Authorship

Section	Primary Author(s)	Editor(s)
1.0 Introduction	Kyle Lopez	All
2.0 Background	All	All
2.1 The Margareta of Romania Royal Foundation	Mary Braen	Mary Braen, Tommy Ciolfi
2.2 Romanian Senior Demographics	Kyle Lopez, Mary Braen	Mary Braen, Tommy Ciolfi
2.2.1 Senior Financial Situation	Kyle Lopez	Mary Braen, Tommy Ciolfi
2.2.2 Economy	Kyle Lopez	Mary Braen, Tommy Ciolfi
2.2.3 Senior Healthcare and Pensions	Kyle Lopez, Mary Braen	Mary Braen, Tommy Ciolfi
2.3 Healthy Lifestyle	All	All
2.3.1 Quality of Life of Romanian Seniors	Mary Braen	Tommy Ciolfi
2.3.2 Romanian Senior Knowledge about Healthy Living	Mary Braen	Tommy Ciolfi
2.4 Technology as a Means to Learn	Tommy Ciolfi, Kyle Lopez	All
2.4.1 Romanian Internet Access	Kyle Lopez	All
2.4.2 Seniors' use of Technology for Communication	Tommy Ciolfi	All
2.4.2.1 Zoom	Tommy Ciolfi	All
2.4.3 Remote Options for Senior Learning	Tommy Ciolfi	All
2.4.4 Senior Video Club	Kyle Lopez	Tommy Ciolfi
2.4.5 General Data Protection Regulation	Kyle Lopez	Mary Braen, Tommy Ciolfi

2.5 Creation of Guides for Seniors Best Practices	Mary Braen	Tommy Ciolfi, Kyle Lopez
2.6 Stakeholders	Tommy Ciolfi	Mary Braen, Kyle Lopez
2.7 Summary	All	All
3.0 Methodology	All	All
3.1 Gaining Knowledge about the GDPR in Romania	Kyle Lopez	Mary Braen, Tommy Ciolfi
3.2 Interviews with Elderly Phone Line Volunteers	Kyle Lopez	Mary Braen
3.3 Creating Guides for Zoom and GDPR	Mary Braen	Kyle Lopez
3.4 Surveying Seniors for Initial Information	Tommy Ciolfi	Kyle Lopez
3.4.1 Distributing Both Guides to the Seniors	Mary Braen	Tommy Ciolfi, Kyle Lopez
3.5 Surveying Seniors for Guide Feedback	Tommy Ciolfi	Kyle Lopez, Mary Braen
3.6 Conducting a Trial Senior Video Club	Kyle Lopez	Mary Braen
3.6.1 Surveying Seniors for Video Club Feedback	Kyle Lopez	Mary Braen
Appendix A Royal Foundation Lawyer Interview Questions	Kyle Lopez	Mary Braen
Appendix B: Royal Foundation Volunteer Interview Questions	Kyle Lopez	Mary Braen
Appendix C Senior Survey 1	Tommy Ciolfi	Mary Braen, Kyle Lopez
Appendix D Senior Survey 2	Tommy Ciolfi	Kyle Lopez
Appendix E: Senior Video Club Feedback Survey	Kyle Lopez	Mary Braen

Table of Contents

Authorship	ii
Table of Contents	iv
List of Figures	vi
1.0 Introduction	1
2.0 Background	4
2.1 The Margareta of Romania Royal Foundation	4
2.2 Romanian Senior Demographics	5
2.2.1 Senior Financial Situation	6
2.2.2 Senior Healthcare and Pensions	8
2.3 Healthy Lifestyle	10
2.3.1 Quality of Life of Romanian Seniors	10
2.3.2 Romanian Senior Knowledge about Healthy Living	12
2.4 Technology as a Means to Learn	14
2.4.1 Romanian Internet Access	14
2.4.2 Seniors' use of Technology for Communication	15
2.4.2.1 Zoom	16
2.4.3 Remote Options for Senior Learning	16
2.4.4 Senior Video Club	18

2.4.5 General Data Protection Regulation	18
2.5 Creation of Guides for Seniors Best Practices	20
2.6 Stakeholders	21
2.7 Summary	21
3.0 Methodology	23
3.1 Gaining Knowledge about the GDPR in Romania	25
3.2 Interviews with Elderly Phone Line Volunteers	26
3.3 Creating Guides for Zoom and GDPR	27
3.4 Surveying Seniors for Initial Information	28
3.4.1 Distributing Both Guides to the Seniors	29
3.5 Surveying Seniors for Guide Feedback	29
3.6 Conducting a Trial Senior Video Club	30
3.6.1 Surveying Seniors for Video Club Feedback	32
References	33
Appendix A: Royal Foundation Lawyer Interview Questions	40
Appendix B: Royal Foundation Volunteer Interview Questions	43
Appendix C: Senior Survey 1	46
Appendix D: Senior Survey 2	50
Appendix E: Senior Video Club Feedback Survey	54

List of Figures

Figure 2.1: Romania's Age Demographics from 2010-2020	5
Figure 2.2: Average Percentages of European Union (EU) Populations Facing Risks of Poverty	7
Figure 2.3: Average Percentages of European Union (EU) Senior Populations Facing Risks of Poverty Based on Gender	8
Figure 2.4: Romanian Senior Psychological Health and Social Functioning Compared to Croatian and Polish Seniors	9
Figure 2.5: Top Three Topics of Online News Articles Geared Towards Romanian Seniors	13
Figure 2.6: Percentage of Romanian Households with Internet Access	15
Figure 2.7: Number and Percentages of the SCWW's Impact on Seniors	17
Figure 3.1: Gantt Chart for Project Workload for 3/14/22 - 5/3/22	24

1.0 Introduction

Seniors around the globe report lacking reliable sources of health information and being too health illiterate to improve their health conditions. Health literacy is defined as the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health (Pleasant, 2013). One study in the United States considered one out of two American seniors as health illiterate at the start of 2003 (Parker et al., 2003). In a 2014 survey of 49 seniors with education levels at or above a high-school level, 55% of seniors reported having troubling understanding and following their doctors' health recommendations (Smith, 2014). Furthermore, only 3% of seniors in the United States are considered proficient in health literacy (Aspinall et al., 2012). Low health literacy levels are attributed to higher hospitalization rates and limited activity in the senior community (Aspinall et al., 2012). Increasing the health literacy of seniors would allow them to improve their health and better understand doctors' recommendations.

Health literacy analysis tests on the general populace in Romania revealed that 33.2% have a problematic level and 7.5% an inadequate level of health literacy (Coman et al., 2022). Forty-one percent of Romanian elderly stated that they are not fully informed on healthy lifestyle practices (Eglīte et al., 2009). In Romania, the vast majority (67%) of individuals over the age of 75 years old assessed that their general health was in a bad or very bad condition (Marinescu, 2020). Elderly Romanians rated their psychological health and social functioning lower than other European countries, which contributes to a lower quality of life (Ghinescu et al., 2014). Focusing on increasing the exchange of health information between seniors and physicians will help improve the quality of life of seniors.

Technological solutions to address health literacy among Romanian seniors might be particularly beneficial. Previous attempts at implementing social assistance programs using the internet for Romanian seniors saw challenges in teaching seniors about the technology due to their limited “learnability of technologies”; overcoming this is difficult because only 13% of Romanian seniors use the internet at least once a week (Marinescu & Rodat, 2018; Rampioni et al., 2021). However, all Romanian seniors interviewed about their perspectives on technology reported having a desire for using technology daily (Rampioni et al., 2021). Therefore, further research into instructing seniors on the use of technology is a main priority for growing senior participation in virtual activities.

The “Margareta of Romania Royal Foundation” (Royal Foundation) is an organization focused on building communities and fostering intergenerational relations in Romania. They work on a variety of projects, one of which is “Telefonul Vârstnicului” (the Elderly Line). This is a telephone line in which seniors from all over Romania can call for general health-related information or to have conversations with the people answering the phones (The Margareta of Romania Royal Foundation, 2020a). The goal of the Elderly Line is to increase Romanian seniors’ overall quality of life. This phone line has been beneficial in helping Romanian seniors feel less lonely and gain useful information; however, the Royal Foundation wants to do more to mitigate the effects of loneliness in seniors and to offer them health-related knowledge. They plan to implement a Senior Video Club, which would provide seniors who call the phone line with an opportunity to join a webinar where a medical professional will give a lecture on a health-related topic.

The goal of this project is to augment the work done by the Margareta of Romania Royal Foundation on a senior video club to connect seniors with medical professionals and to promote

a healthy lifestyle among Romanian elderly. In order to achieve this goal, we will perform the following objectives:

Improve Romanian seniors' understanding of their rights to data privacy as it applies to the senior video club.

Improve Romanian seniors' ability to use Zoom in order to facilitate their participation in the senior video club.

Assess the user experience of a trial senior video club and the effectiveness of the club's promotion for improving senior health.

2.0 Background

This chapter begins by introducing The Margareta of Romania Royal Foundation and detailing their work with Romanian seniors. It then explores context about the life of Romanian seniors, specifically identifying financial and healthcare information relevant to their daily lives. Next, it introduces the quality of life of Romanian seniors, and the importance of community. This chapter also introduces the concept of the Senior Video Club. Next, we examine how the elderly can utilize different digital technologies to communicate and learn information. Finally, we introduce the major stakeholders for this project.

2.1 The Margareta of Romania Royal Foundation

The Margareta of Romania Royal Foundation is an organization that works with vulnerable communities to help Romanians achieve their full potential. To work towards this vision, they have many projects which aim to build powerful communities and connect generations. A few of their projects include the Special Funds for Children, Young Talents which focuses on helping the talented people of the younger generation, and their Generation Centers project which works to help people of all generations (The Margareta of Romania Royal Foundation, 2020b). The team will be working closely with their Elderly Line project (“Telefonul Vârstnicului”), which works with Romanian seniors who need helpful information or who feel lonely. The Elderly Line allows for seniors all over Romania to call a phone number and talk to the volunteers and workers answering the phones if they are feeling lonely, or ask about any general or health-related information that they might want or need.

2.2 Romanian Senior Demographics

Romania classifies citizens as seniors when their age is at or over the age of sixty-five (“Romania,” 2022). The percentage of seniors has grown precipitously over the past decade. As shown in Figure 2.1 Romanian seniors represented 15.67% of the overall population in 2010, by 2020 they represented 19.23% of the population (*Romania - Age Structure 2020*, n.d.). The rate of population growth among seniors increased approximately 0.30% each year prior to 2020 (*Romania - Age Structure 2020*, n.d.). Romania’s growth rate of -0.38% in 2021 suggests that Romania’s society is aging (“Romania,” 2022). The ratio of socially and economically dependent seniors to the overall population in Romania in 2020 was 29.5% (“Romania,” 2022).

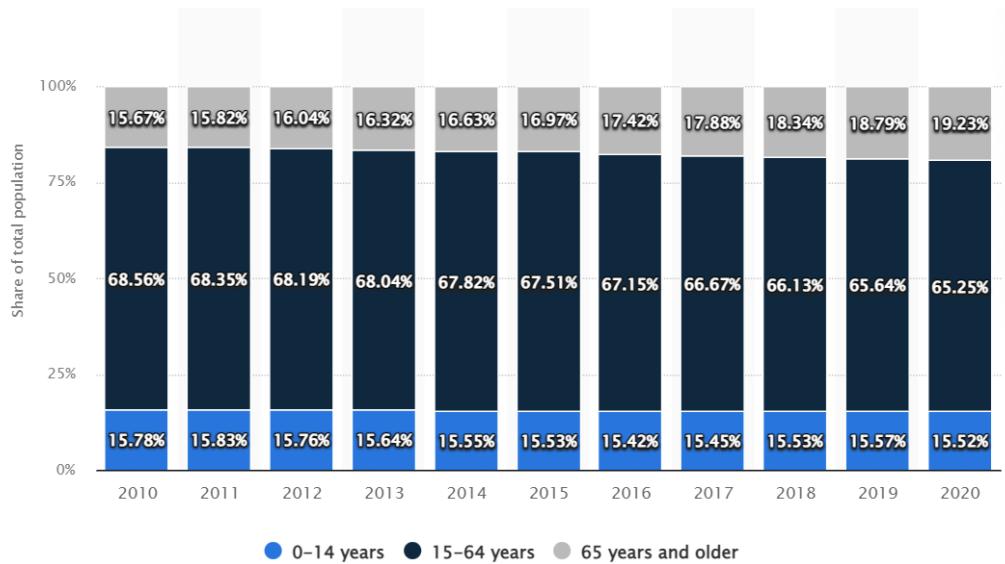


Figure 2.1: Romania’s Age Demographics from 2010-2020 (*Romania - Age Structure 2020*, n.d.)

By 2050, seniors and people aged 14 years or younger will respectively form 36.5% and 14.3% of the population in Romania (Marinescu & Rodat, 2018). The social implication of this senior growth rate is that more seniors will be dependent on younger generations, while younger generations will have fewer people to provide seniors’ support. This demographic shift implies

that the senior dependency ratio in Romania will increase and cause more seniors to be dependent on the government for financial support. Furthermore, the aging population will strain individuals' lived experiences as younger people will be spending more time financially supporting seniors than enjoying other activities. The population aging impacts the government's ability to provide adequate pensions, spending on future healthcare plans, and long-term sustainability of public finances.

2.2.1 Senior Financial Situation

The source of present-day Romania's economic troubles began with the overthrow of Romania's Communist Party in 1989 due to the nation's ten billion dollars of foreign debt (Hitchins, 2013). Based on the U.S. Central Intelligence records, Romania's political unrest in the aftermath of Communism affected the nation's workforce. The nation began its transition from communism to a free-market economy with a largely obsolete industrial base and production which was unsuited to the country's needs ("Romania," 2022). The country's inability to reform the financial crisis from this era resulted in substantial portions of the population facing poverty. As of 2018, 23.8% of Romania's total population was below the poverty line ("Romania," 2022). As shown in Figure 2.2, 41% of the overall population in Romania faced risks of poverty in 2014.

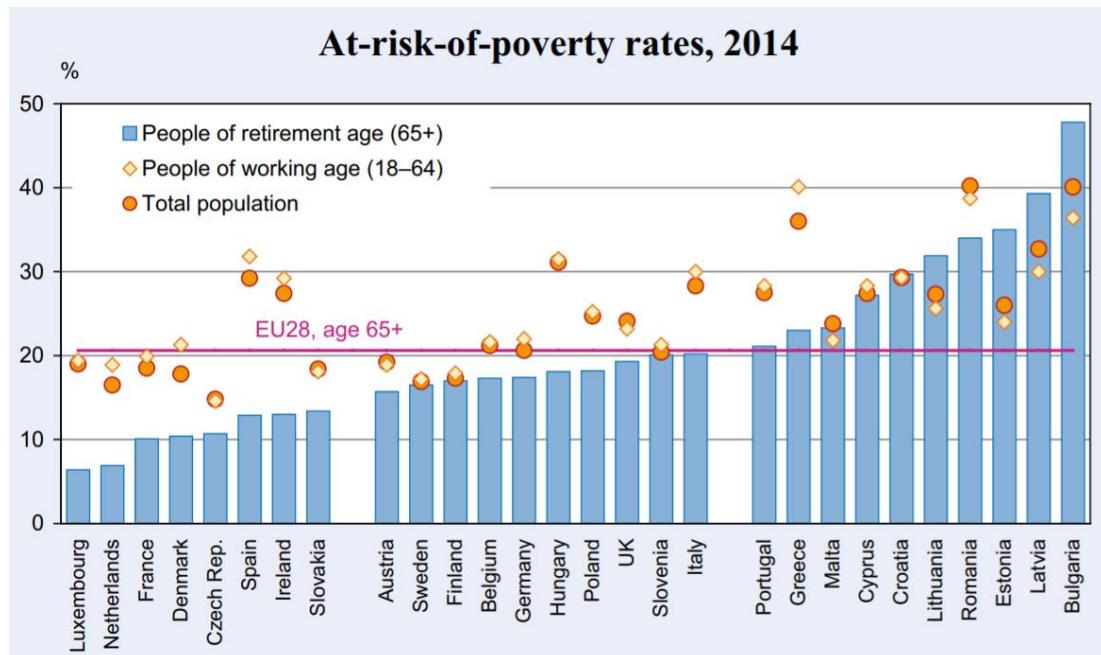


Figure 2.2: Average Percentages of European Union (EU) Populations Facing Risks of Poverty (Antczak & Zaidi, 2016)

The percentage of Romania's population at risk of poverty was higher than the EU population average of 21% and marginally above the Bulgarian population average of 40%, which was the next post-communist EU country with the most people at risk of poverty. However, 34% of the Romanian senior population faced risks of poverty, which is the fourth highest country in the EU with the most seniors at risk of poverty with respect to their individual senior population size (Antczak & Zaidi, 2016). As shown in Figure 2.3, 38% of female Romanian seniors faced risks of poverty in 2014, whereas 28% of male Romanian seniors faced risks of poverty (Antczak & Zaidi, 2016). The data implies that female seniors in Romania are the most economically vulnerable. Research of women in the United States and EU countries indicates women having interrupted financial careers due to maternity leaves and other factors which limit their financial security and savings after retirement (Bucher-Koenen et al., 2017).

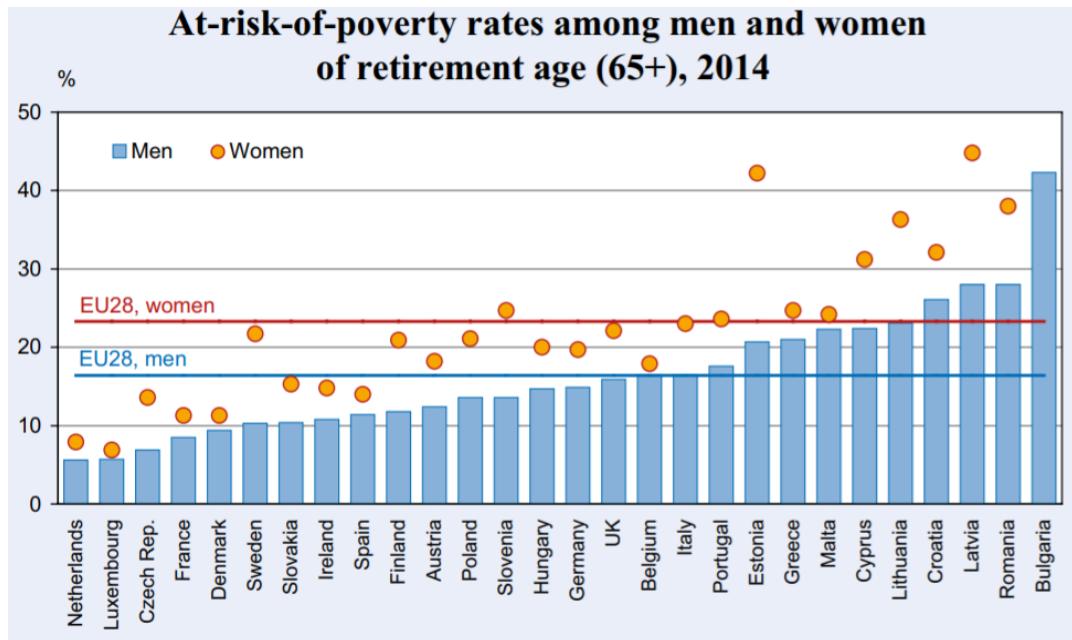


Figure 2.3: Average Percentages of European Union (EU) Senior Populations Facing Risks of Poverty Based on Gender (Antczak & Zaidi, 2016)

2.2.2 Senior Healthcare and Pensions

The healthcare options for Romanian seniors, as well as the general populace, remain some of the worst in the EU. Health spending by the Romanian government is the lowest in the EU as the government allocates 5% of their GDP for healthcare compared to a European average of 9.8% (Băjenaru et al., 2020). The hospitalization rate of the general population in Romania was 46,779.1 per 100,000 people per year from 1996 to 2001 (Alexandrescu, 2004). The most common ailments among hospitalized seniors in Romania are systemic hypertension, diabetes, stroke, congestive heart failure, and chronic kidney disease (Caruntu et al., 2021). In Romania, the vast majority (67%) of individuals over the age of 75 years old assessed that their general health was in a bad or very bad condition (Marinescu, 2020). 48% of Romanian elderly patients require prolonged hospitalization, which is 12 days or more, for their treatments (Gyalai-Korpos et al., 2015). As a result, elderly Romanians rated their psychological health and social

functioning lower compared to other European countries such as Croatia and Poland, as shown in Figure 2.4 (Ghinescu et al., 2014). They also have more trouble doing instrumental daily tasks, such as getting dressed or using the bathroom, than either of the other two countries studied (Ghinescu et al., 2014).

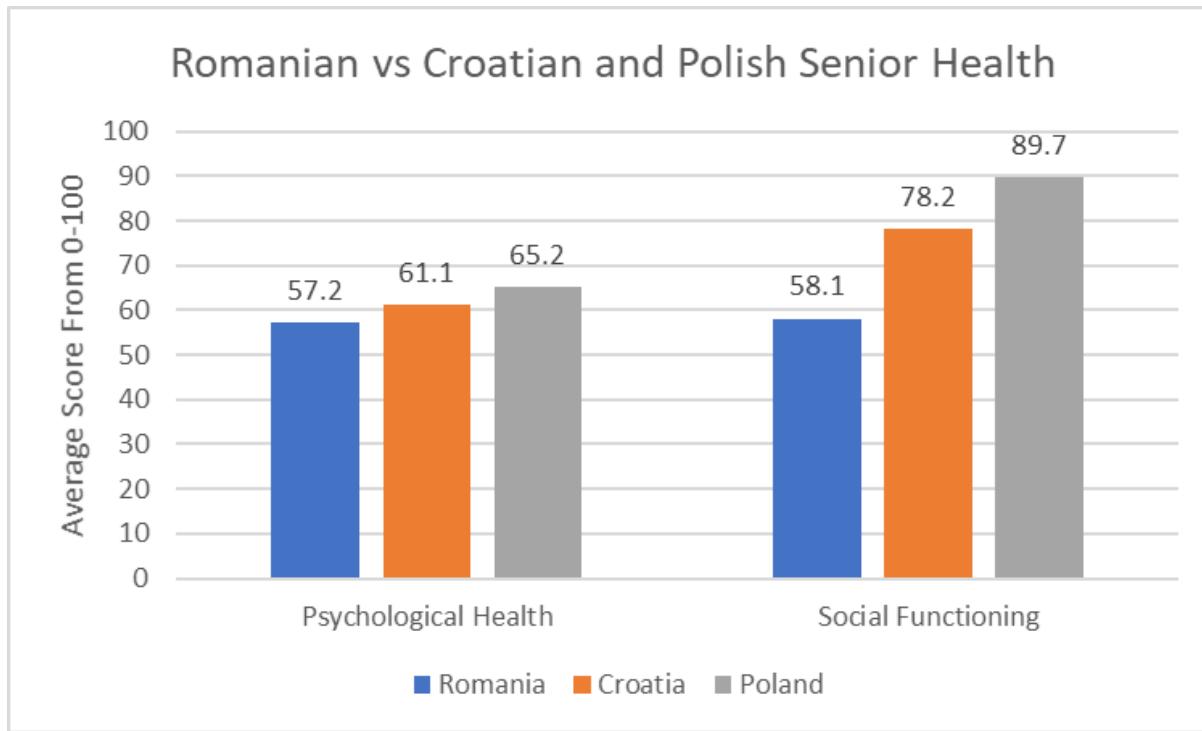


Figure 2.4: Romanian Senior Psychological Health and Social Functioning Compared to Croatian and Polish Seniors (Ghinescu et al., 2014)

Romania's low allocation of money for healthcare suggests healthcare from the government inadequately supports financially vulnerable seniors. In Romania, the government provides universal healthcare to all citizens and cost exemptions to marginalized groups such as veterans (Hernández-Quevedo et al., 2016). Under this universal healthcare, Romanian citizens pay some out-of-pocket payments for costs such as user charges for pharmaceuticals and charges for services not recognized as national health programs (Hernández-Quevedo et al., 2016). Despite the elderly being exempt from hospital co-payments, all Romanians including seniors pay the full price of hospital services for stays longer than 14 days (Hernández-Quevedo et al.,

2016). Furthermore, Romanians have to pay 10%-50% of the reference prices for medicinal drugs through the state health insurance (Hernández-Quevedo et al., 2016).

The European Union statistics estimated a benefit ratio (average public pension divided by the average wage earned by seniors before retirement) of 35.5% for Romanian seniors in 2016 while the EU average was 43.5% (*Country Report Romania 2020*, 2020). Based on the average worker's wage of 41,796 Leu/year (9,613 USD), a senior would receive 14,837 Leu (3,412 USD) in pensions each year ("Romania," 2022). Due to little allocation of government funds for covering health care costs for citizens, seniors face a high risk of losing their long-term fiscal independence (*Country Report Romania 2020*, 2020). If Romanian seniors are hospitalized for more than 2 weeks, they pay on average 410 Euros (2,028.95 Leu) for each day in the hospital after the 2 week period (De Freitas Bradley & Grigorescu, 2019). Based on the seniors' average yearly pension amount, a senior's pension would cover an additional 7 days of hospital care before the senior faces poverty. The high poverty rate of Romanian seniors and little financial support for healthcare provides a financial incentive for seniors to lead healthy lifestyles as a way to avoid the possibility of expensive and prolonged hospitalization in the future.

2.3 Healthy Lifestyle

2.3.1 Quality of Life of Romanian Seniors

Many seniors consider themselves to be happy, with 64.4% of seniors rating their mental health positively (Ziółkowski et al., 2015). Although there are negative aspects to aging, including bodily pain and physical weaknesses, a study which evaluated the life satisfaction and quality of life of seniors suggests that a positive quality of life can be associated with increased

age (Ziółkowski et al., 2015). Seniors who focus on having control over their lives through significant contributions to their aging process are likely to increase their quality of life (Ziółkowski et al., 2015). These contributions may be simple and may help slow down the aging process. Some examples include monitoring their health in relation to the time of day or weather, as well as familiarizing themselves and becoming trained in the activities needed for daily living (Ziółkowski et al., 2015).

Various factors influence senior quality of life and overall life satisfaction. Some significant factors include age, self-care capacity, health, and economic resources (Borg et al., 2006). Researchers found a positive correlation between quality of life and higher locus of control, better cognitive status, more functional capacity, better self-rated health and stronger social anchorage (Enkvist et al., 2012). The study found that the best predictor of life satisfaction over time was the number of common physical and psychiatric symptoms that the senior experienced within the last three weeks (Enkvist et al., 2012). At the start of the 21st century, 80% of all seniors aged 65 and older had a chronic health condition while 50% of all seniors reported having two or more chronic health conditions (Parker et al., 2003). Since quality of life is influenced negatively by health, these percentages suggest a low quality of life for seniors.

It is important that seniors remain connected in communities as they age. The current state of the Covid-19 pandemic makes it hard for seniors to remain connected in person, and thus technology becomes an important aspect of remaining engaged in communities. Web-based interactions are becoming more and more common, due to the pandemic as well as the increasingly networked society in which we live (Ivan & Hebblethwaite, 2016). Seniors can interact with their families through platforms such as Skype, which allows them to be involved in

their family's lives without being there personally (Nedelcu, 2017). This gives the seniors a sense of community through family.

Engaging in communities is important for seniors to sustain a healthy lifestyle. Seniors who feel comfortable walking around their neighborhood often feel more engaged with their community (Kerr et al., 2012). This also creates opportunities for unplanned social interactions, which are important for seniors who may feel isolated (Kerr et al., 2012). A study found that engaging in communities increased seniors' reciprocity and meaningful interactions (Emlet & Moceri, 2012). While these interactions are beneficial, they may not be practical due to health concerns related to the current pandemic. In this case, online communities can be a reasonable replacement. In a study designed to test the benefits of online communities, three benefits were noted: social support, self-empowerment, and improved wellbeing (Kamalpour et al., 2020). Whether the community is online or in-person, the themes of meaningful interactions and increased social support are constant, indicating their relevance.

2.3.2 Romanian Senior Knowledge about Healthy Living

Older senior citizens above the age of 70 reported preferences for receiving their health information from human sources, primarily professional and familial sources (Foo et al., 2014).

Online communities and interactions are not only beneficial to seniors' quality of life; they can also be used as a means for seniors to gain knowledge and learn information about health. Interviews of 12 Romanian seniors that had internet access found that all respondents used the internet as a starting point for finding general information related to health (Marinescu & Rodat, 2018). However, seniors reported that their informed decisions about health issues adhered to their physicians' advice (Marinescu & Rodat, 2018). In addition, Older senior citizens

above the age of 70 reported preferences for receiving their health information from human sources, primarily professional and familial sources (Foo et al., 2014). When Romanian seniors accessed online information about health, they typically accessed it using search engines like Google and avoided medical blogs (Marinescu & Rodat, 2018). In a survey of the Romanian population, 38.1% of people aged 65-75 years and 66.7% of the people over the age of 75 years old assessed that their general health was in a bad or very bad condition (Marinescu, 2020).

A review of online news articles directed towards Romanian seniors showcased what information news outlets are providing seniors. The top three most published article topics are shown in Figure 2.5. “Health Issues” was the third most published article topic with 78 news articles. “Daily life Activities” was the most published topic with 103 articles and “[Internet] Privacy, Surveillance, and Neutrality” was the second topic with 87 (Ivan & Hebblethwaite, 2016). This data suggests that Romanian news outlets provide seniors with online information sources to teach them about senior-specific health issues.

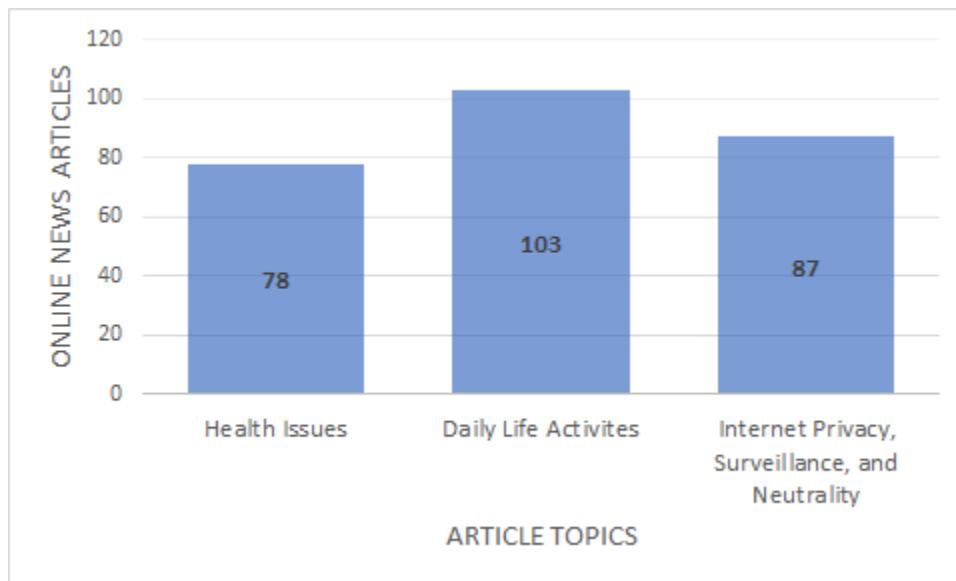


Figure 2.5: Top Three Topics of Online News Articles Geared Towards Romanian Seniors (Ivan & Fernández-Ardèvol, 2017)

2.4 Technology as a Means to Learn

2.4.1 Romanian Internet Access

Despite the economic issues in Romania, the majority of Romanian people have no trouble accessing the internet. According to EU's statistics, Romanian households have been steadily gaining access to the internet since 2007 with 86% of households having internet access as of 2020 (see Figure 2.6) (*Romania*, 2021). However, Romanians use the internet less often than any other country in the EU (Bălăcescu & Babucea, 2018). While 61% of Romanians use the internet at least once per week only 13% of seniors reported using it at least once a week in 2016 (Bălăcescu & Babucea, 2018; Marinescu, 2020). Participating in social networking sites such as Facebook was Romanians' most frequent usage of the internet followed by buying and selling goods (Bălăcescu & Babucea, 2018). Research indicates that seniors who occasionally use the internet tend to have larger social circles and are 33% less likely to suffer from depression than seniors who never use the internet (Cotten et al., 2014). Despite many Romanian households having access to the internet, the seniors' infrequent use of the internet suggests limited participation in a virtual connection program for seniors.

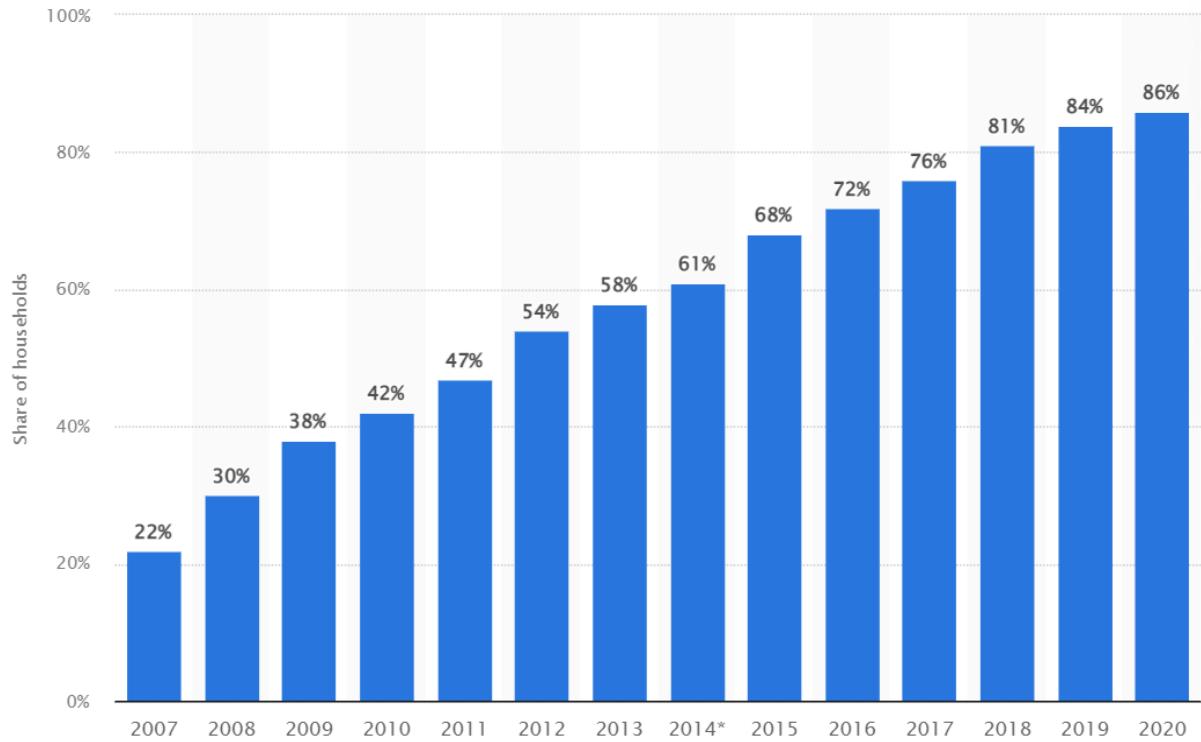


Figure 2.6: Percentage of Romanian Households with Internet Access (2007-2020) (*Romania, 2021*).

2.4.2 Seniors' use of Technology for Communication

Social interaction positively impacts the life of many seniors. Online communication platforms serve as a means to connect seniors and facilitate social interaction. Other forms of technology can also reduce social isolation of the elderly. One study noted that when given an online communication platform to connect with each other, such as Zoom, seniors communicated about both personal needs and experiences (Biniok et al., 2016). Texts, phone calls, and emails allow seniors to stay in contact with their friends and family who they cannot connect with in-person (Pelizäus-Hoffmeister, 2016). This helps seniors avoid feelings of social isolation, increasing their quality of life.

2.4.2.1 Zoom

Zoom is a video conferencing software that allows people to stay connected. In one study, a group of elderly women who formerly met in-person each week to discuss progress on writing their memoirs have since transitioned to Zoom (Hogan, 2021). The people that participate in the online group love the change, and one member of the group reported feeling that seeing into each other's homes brings everyone in the class closer together (Hogan, 2021). A similar story has unfolded in Florida, where a group of elderly women that had been meeting in-person for 20 years transitioned to meeting over Zoom in response to the COVID-19 pandemic (Page, 2021). This group serves as a support system for each other, keeping those involved from feeling completely isolated. One individual compared participating in the group to having a lifeline (Page, 2021). Both of these groups showed that when given access, some senior citizens are able to connect with each other remotely. Zoom is a particularly useful platform for connecting seniors, because those that have trouble learning new technologies can use a telephone to call into meetings. They are able to participate in the meeting, even if they do not have Zoom. A review of 25 different studies related to senior citizens and their use of technology highlighted that interactive media like Zoom should be the focus of research on digital technology for the elderly moving forward, because it is currently understudied (Sen et al., 2022).

2.4.3 Remote Options for Senior Learning

Safety mandates forced senior centers across the globe to shut down as a result of the COVID-19 pandemic, and many implemented remote options for seniors to be able to interact with each other. Other programs also exist for virtual interaction. One example of this is a “senior center without walls” (SCWW). The goal of a SCWW is to provide programming and

social support for adults who have difficulty attending in-person senior center activities. While different SCWW have existed since 2004, a recent study found that this remote programming for elderly adults reduced feelings of isolation (Newall & Menec, 2015; Roland et al., 2021). Feelings of loneliness and social isolation have similar impacts to health as other risk factors like physical inactivity, smoking, and obesity (MacLeod et al., 2018; Roland et al., 2021). Some SCWW programs include group conference calls with a facilitator, health and wellness information, and learning. The only required technology to participate in these activities is a cell phone (Roland et al., 2021). Figure 2.7 shows the breakdown of seniors that improved, experienced no change, or declined after participating in the SCWW in a variety of categories. The figure presents the number of senior responses within the bars for each category, while the percentages are shown at the bottom of the figure. Statistics are shown for changes in anxiety/depression, pain/discomfort, usual activities, self care, and mobility. Approximately 40% of seniors involved with the SCWW had their feelings of anxiety/depression improve.

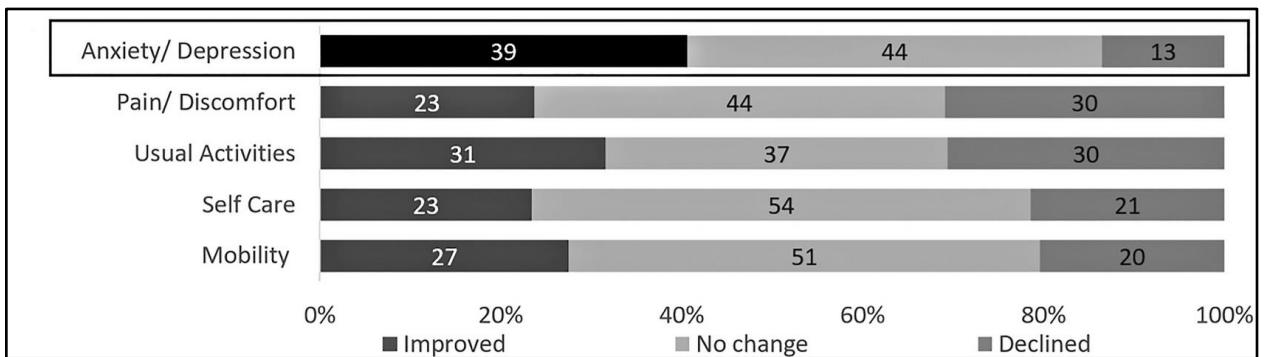


Figure 2.7: Number and Percentages of the SCWW's Impact on Seniors (Roland et al., 2021)

Other groups have organized virtual exercise programs. One example is a Facebook live-streamed elderly exercise class, which a study revealed had a positive effect on lower-limb strength and flexibility (Chang et al., 2021). The use of a live-streaming platform enables an instructor to provide real time feedback to the participants (Chang et al., 2021). This platform

provides an experience similar to an in-person exercise class than watching a prerecorded video. Based on the results, the authors of the study recommend live-streaming exercise programs as a way to increase the functional fitness of elderly adults not able to access in-person programs (Chang et al., 2021).

2.4.4 Senior Video Club

The Royal Foundation is implementing a senior video club to educate seniors about health issues and promote seniors to live healthy lifestyles. This will take the form of a Zoom call that seniors from all over Romania can join. Romanian seniors who call the Elderly Line will be the starting participants that take part in the senior video club; the Royal Foundation hopes to get feedback from the first senior video club meetings in order to include Romanian seniors that are not clients of the Elderly Line into the club's membership base.

The Royal Foundation will have one of their social workers moderate each meeting and notify participating seniors via email about upcoming club meetings. Members of the Royal Foundation's administrative board will arrange for medical specialists such as psychologists or cardiologists to present information for each senior video club topic. During the senior video club, a medical specialist will give a presentation about a topic of interest for approximately forty minutes, followed by a twenty- minute Q&A session. This senior video club will work to improve the health knowledge of attending Romanian seniors.

2.4.5 General Data Protection Regulation

Romanian organizations offering online services to the general population must tailor their services to be in accordance with the General Data Protection Regulation (GDPR). In 2016,

the EU outlined the GDPR and its enforcement after May 25th 2018 (Chase, 2019). GDPR defines companies and governments collecting personal online data as “data controllers” and people offering their personal data to data controllers as “data subjects” (Custers et al., 2018). The regulation requires the protection of data subjects’ information and rights for people to know if they release data to companies or governments. However, the current GDPR policy contains 11 sections that span 99 pages which makes reading and understanding of the ramifications of data protection by average people highly unlikely (GDPR Archives, 2016). GDPR grants each member state legal authority to fine companies failing to comply with data protection (Chase, 2019). EU members typically fine technology companies for failing to obtain data release forms prior to processing their data.

Romania’s data protection authority (PDA) remains the second strictest enforcer of the GDPR in the EU with Spain being the first, according to the European Union’s Cameron McKenna and Sigle (CMS) law firm (Wolff & Atallah, 2021). In 2020, Romania issued 27 fines with average costs of €18,691 related to GDPR, whereas Spain issued 73 fines with average costs of €31,941 (Wolff & Atallah, 2021). Although Romania’s number of fines seems low compared to Spain’s fine, Spanish companies’ refusal to comply resulted in 31 companies receiving repeat-offender fines one year after their initial citation (Wolff & Atallah, 2021). The Center for Law and Digital Technologies in the Netherlands found Romania’s PDA to be successful despite its staff shortages. The Center for Law and Digital Technologies determines a nation’s PDA to be successful if the country reports low numbers of repeat offenders and few formal complaints from their people. Romania reported 4 repeat offenders and approximately 5000 filed complaints, which met the CMS’s success measure of having fewer than 5 repeat offenders and less than 10,000 complaints (Wolff & Atallah, 2021).

The GDPR remains an additional requirement for companies to implement in Romania (Wolff & Atallah, 2021). The percentage of Romanians that consider the processing of personal data to be a big issue is less than the average percentage of people in EU countries, which is 35%. (Custers et al., 2018). In terms of public awareness of data protection, 77% of Romanians are aware of websites using their personal data, which is slightly above the 74% EU average. Romania's strict adherence to GDPR is a point of financial concern for the Royal Foundation instead of being a social issue for the seniors. Since the Royal Foundation currently maintains a website in compliance with the GDPR, they do not see the GDPR as a reason to hesitate on implementing a senior video club.

2.5 Creation of Guides for Seniors Best Practices

Guides can help make complicated information easy to understand. Many factors influence the creation of guides for seniors. Decreased visual performance in older adults indicates that increasing the text size of the guide as well as the contrast would be beneficial (Tsai et al., 2012). At the same time, due to declines in cognitive processes, seniors should only see information relevant to the task they are currently attempting to perform (Tsai et al., 2012). If the guide will be available as the seniors are completing the task, it is preferable to present the specific actions for the user to perform. This may take the form of a checklist with the subtasks that need to be done in order to complete a task, such as downloading Zoom (Hickman et al., 2007). When seniors in a study had the guide available while completing tasks, they performed faster as well as more accurately when the guide was in the form of guided action, which involved telling the user exactly what steps to take to complete a task, rather than guided attention, which involved pointing the user's attention to the relevant component of the task

(Hickman et al., 2007). Seniors also indicated that they prefer learning methods that are easy to understand and do not involve a lot of time (Czaja & Sharit, 2012).

2.6 Stakeholders

The major stakeholders in this project are Romanian seniors and the Royal Foundation. Romanian seniors are the most important stakeholder, because the project is for their benefit. The intent of this project is to give seniors access to a new source of information, with the senior video club. This new source of information is important because it will inform the seniors about relevant health topics which they can use to improve their quality of life. The other stakeholders in this project are members of the Royal Foundation. The social workers and volunteers in the Elderly Line connect with the Romanian seniors regularly. They answer the phone when the elderly call, and they call certain seniors on a weekly basis to socialize. Working collaboratively with them on all aspects of the senior video club will ensure it benefits Romanian seniors. The Royal Foundation lawyer also has a stake in this project. They will want to make certain that the guide and other data privacy measures taken with the senior video club are compliant with the GDPR. The interests of each stakeholder must be considered in the implementation of this project, to ensure that Romanian seniors will truly benefit without the Royal Foundation facing legal backlash.

2.7 Summary

Romania's aging society, where one out of every three seniors risks poverty, suggests Romanian seniors are a growing and vulnerable community requiring additional support. On average, Romanian seniors rate their quality of life lower than other EU countries and their health in poor condition. Seniors are deterred from improving their health without doctor

approval because they view online information about health issues as untrustworthy. Furthermore, this distrust of online information could be the reason why 41% of Romanian seniors feel only partially informed about their health conditions. Research has shown that participation in online social platforms can benefit depression prevention and expansion of social circles in senior communities. Existing online senior social programs utilizing Zoom provide an understanding of how to approach facilitating a one-sided virtual information exchange program in the Romanian senior community. The purpose of this project is to provide a framework for a senior online program that provides seniors options and information for improving their current health conditions.

3.0 Methodology

The goal of this project is to augment the work done by the Margareta of Romania Royal Foundation on a senior video club to promote a healthy lifestyle among Romanian elderly. In order to achieve this goal, we will perform the following objectives:

1. Improve Romanian seniors' understanding of their rights to data privacy as it applies to the senior video club.
2. Improve Romanian seniors' ability to use Zoom in order to facilitate their participation in the senior video club.
3. Assess the user experience of a trial senior video club and the effectiveness of the club's promotion for improving senior health.

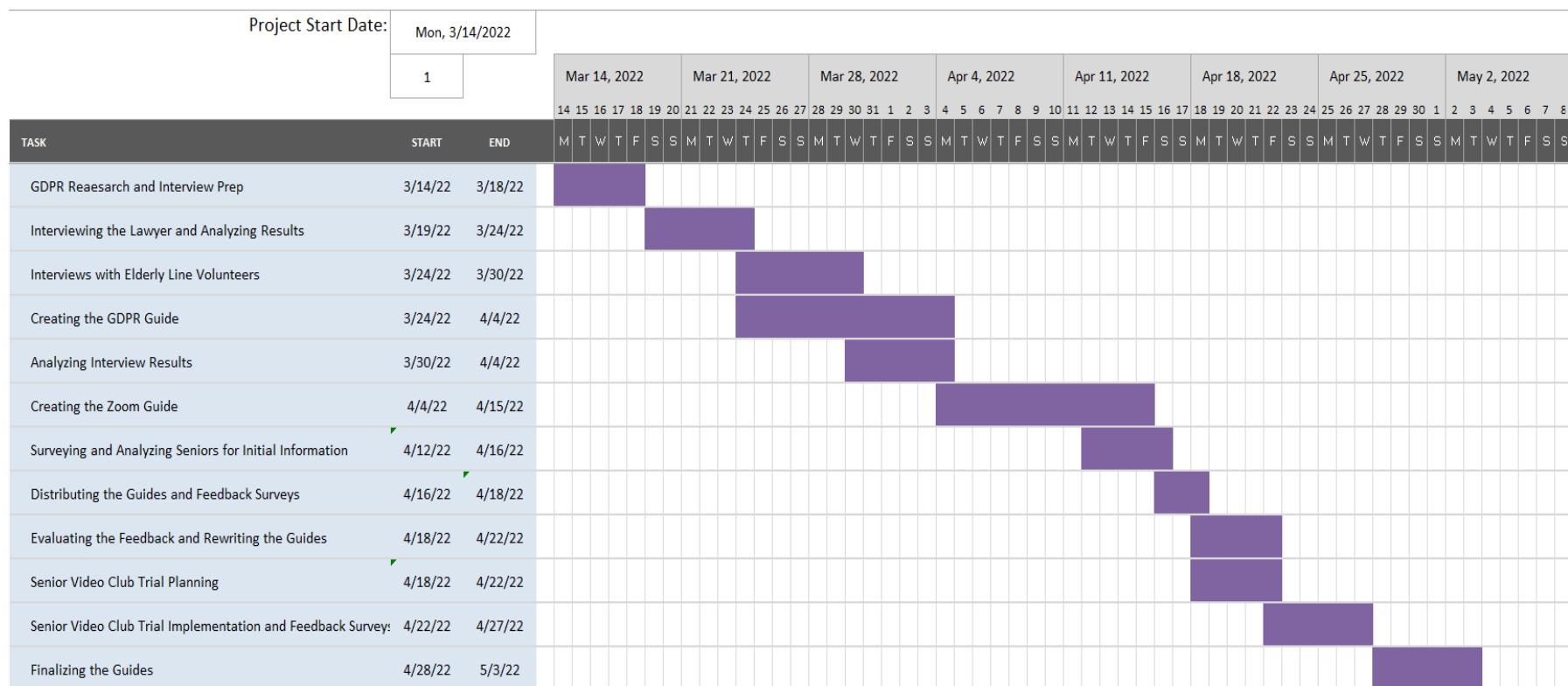


Figure 3.1: Gantt Chart for Project Workload for 3/14/22 - 5/3/22

3.1 Gaining Knowledge about the GDPR in Romania

The first objective will require additional research about data protection under the General Data Protection Regulation (GDPR) and its enforcement in Romania. The research will cover the rules of data privacy in Romania and consumers' abilities to provide or withhold consent of their data to companies. From background research, the GDPR is a set of laws and guidelines established by the United Nations (UN) for its member nations to implement as national laws. Accomplishing this research online in Romania will involve reading the English version of the GDPR mandate from the UN and noting essential information important for consumers. The research for Romanian-specific laws about data privacy will involve an in-person legal consultation with a Romanian lawyer.

The online research will investigate the existence of special considerations for seniors in the GDPR such as protected statuses for seniors providing their data. The online research will also consider whether the Royal Foundation falls within a special category of data collectors under the GDPR. For example, the Royal Foundation's distinction as a social beneficiary rather than a for-profit company may grant the senior video club additional measures to follow or special leniencies.

The team will interview a lawyer who represents the Royal Foundation and specializes in the GDPR. In past meetings with the Royal Foundation, they mentioned having a lawyer at hand. The Royal Foundation will help us identify the lawyer and obtain his or her contact information. The team will then arrange the interview based on the given contact information through emails and phone calls with the lawyer, and we will have a member of the Royal Foundation present to translate if necessary. The interview will be semi-structured and held in-person. We would prefer that the location of the interview happen at the headquarters of the Elderly Line where we will be

working; however, we would be willing to commute to the lawyer's office and plan necessary travel arrangements. If the lawyer does not speak English, we will conduct the interview with an English-speaking member of the Royal Foundation present to act as a Romanian translator.

During the interview, we will describe the intent and framework of the senior video club and ask the questions detailed in Appendix A. Questions 1-3 will inform the team on the necessary information for seniors to learn about the GDPR and protect the Royal Foundation from data privacy lawsuits. Question 4 will gather the lawyer's thoughts on which topics of the GDPR the data privacy guide should address for seniors to learn about. Questions 5-6 will provide the team information on potential restrictions from the GDPR on how the Royal Foundation can host and operate the senior video club. We expect the interview to last 30-45 minutes and anticipate the dialogue going back and forth between the lawyer and the team, as we expect to ask clarifying questions to better understand the legal terminology.

3.2 Interviews with Elderly Phone Line Volunteers

Since the Royal Foundation wishes to have their senior clients participate in and learn from the senior video club, we will research additional information on the senior clients in order to structure the senior video club around their current health, activity, and technological experience. This research will focus on preparing the senior video club in effectively presenting the health information and topics that engage and interest the seniors. The team will interview the volunteers that manage the calls from the Elderly Line for the Royal Foundation. The team's decision for interviewing the volunteers instead of the social workers was that the volunteers are the ones answering the hotline and socializing with the senior clients on a daily basis. Therefore, the volunteers would have first-hand knowledge of the daily life and living conditions of the senior callers. We will conduct the interview process at the Elderly Line call center. Based on

our meetings with the four social workers that administer the Elderly Line, all of the social workers speak English and Romanian and could act as translators.

With a translator reading the questions to the interviewees and a member of the project team recording the translated responses, the interviews will be semi-structured and centered around the questions in Appendix B. Question 1 aims to develop the team's understanding of the seniors' comfort level and experience with Zoom. Questions 2-3 attempt to gauge any health conditions common among Romanian seniors that would affect their participation in the senior video club. The team will use this information to structure the senior video club to be more inclusive and accessible for seniors with disabling health conditions. Question 4-5 attempts to gather information on senior activities during our time in Romania in order to gauge the seniors' availability. We will use this information in planning the timeframe for conducting surveys and trial club meetings with the seniors discussed later in the methodology. The findings from question 6, which asks "What types of information do senior clients typically call the Elderly Line for?", will provide the team with health topic ideas for the trial senior video club to present. The responses to question 7, which asks "How do the seniors respond to health information from online sources?", will provide the team an understanding of the seniors' thoughts on the credibility and reliability of online information sources. Each interview will take about 10-15 minutes to complete.

3.3 Creating Guides for Zoom and GDPR

Once we have interviewed the lawyer representing the Royal Foundation and the volunteers who work at the elderly phone line, we will create two guides. One of these guides will focus on information about the GDPR. Specifically, the guide will include information that the seniors may not know about the GDPR. It will detail aspects of senior data, such as visual

likeness, the hosts of the senior video club and the Royal Foundation will have access to when seniors participate in the club. The second guide will help the seniors access and use Zoom. This guide will include information about how to download and install the platform, as well as how to open it and join meetings. It will also detail some etiquette for when the seniors are online, such as muting themselves while the presenter is talking and raising their hands when they have questions. Both of these guides will be in the form of a pdf document which can be opened on a computer. We will implement features of the research done in our background chapter about creating guides for seniors within our guides.

3.4 Surveying Seniors for Initial Information

To understand Romanian seniors' current knowledge about Zoom and their rights to data privacy, the team will survey Romanian seniors. The Royal Foundation Elderly Line will send a link to the survey to their general email list. The survey will ask participants about their past experiences with Zoom, as well as their knowledge of data privacy rights. For each question, respondents have the option not to answer. The surveys will have both English and Romanian options. We will use Google Translate to translate the survey into Romanian, and someone from the Royal Foundation will review it. The team will develop the surveys online using Qualtrics survey software. Questions 1-3 aim to get a brief understanding of the respondent's age and familiarity with Zoom. The section related to Zoom knowledge attempts to gauge respondent's confidence in performing various tasks on Zoom. The statements related to data privacy attempt to gather information about respondents' understanding of rights to data privacy. The survey is designed to take less than 10 minutes to complete. The survey questions and answer choices are included in Appendix C.

3.4.1 Distributing Both Guides to the Seniors

Once we have surveyed the seniors about their previous knowledge about Zoom and the GDPR, we will send each respondent an email with both of the guides attached. This email will include instructions to read the guide on the GDPR first, and then move on to the guide about Zoom. We will also inform them of the expectations of reading through the guides. For the GDPR guide, we will expect the seniors to read through the guide in its entirety. For the Zoom guide, we will expect them to not only read through the guide, but also follow along in the section that details how to download Zoom. This guide will include visuals to help show the seniors, rather than tell them, how to operate Zoom.

3.5 Surveying Seniors for Guide Feedback

Included in the email to Romanian elderly with both guides will be a survey similar to the one discussed in section 3.3. Comparing the survey results between this survey and the one from section 3.3 will allow the project team to assess the effectiveness of the guides. The survey will ask participants about their comfort performing a variety of actions on Zoom, as well as their knowledge of data privacy rights. For each question, respondents have the option not to answer. The surveys will be available in both English and Romanian. Google Translate will be used to translate the survey into Romanian, and someone from the Royal Foundation will review the survey to ensure accurate translation. The team will develop the surveys online using Qualtrics survey software. Questions 1-4 aim to get an understanding of if the respondent read and followed the directions in the distributed guides. The section related to Zoom knowledge attempts to gauge respondent's confidence in performing various tasks on Zoom. The statements related to data privacy attempt to gather information about respondents' understanding of rights

to data privacy. The survey is designed to take less than 10 minutes to complete, and the survey questions and answer choices are included in Appendix D. We will compare the survey findings with the results of the first senior survey in order to identify concerns with the first draft of the guides and update both guides to better help the seniors.

3.6 Conducting a Trial Senior Video Club

Once we revise the guides, we will begin planning the Royal Foundation's first trial of the online senior video club. The team will first look at the findings from the interviews with the Royal Foundation volunteers for question 6 in Appendix B, which states "What types of information do senior clients typically call the Elderly Line for?". The responses to this question will identify if seniors share a lack of knowledge about a common health or lifestyle issue. If the volunteers' responses suggest a common health question among seniors, the team will create a topic idea for a medical professional speaker to address in the trial senior video club. Otherwise, the Royal Foundation will select a topic for the trial Senior Video Club. A medical professional will present information about the chosen health topic to the seniors at the senior video club in the style of a formal online webinar. The formal webinar style will involve the seniors listening to the presenter's presentation and asking the presenter questions on the subject matter. Seniors will not engage in conversations with each other during the presentation. The purpose of this formal webinar style is to allow a one-way exchange of information about health for seniors to learn from. The senior video club will offer seniors the chance to meet with a trusted medical professional and to receive credible information and advice on health issues. The advice from the medical professional is given to the seniors with the intent that they will use the information to improve their lifestyles.

A member of the Royal Foundation will host the meeting on Zoom and will act as a master of ceremonies during the meeting. The main responsibilities of the host from the Royal Foundation include starting the meeting, introducing the professional speaker, and facilitating the questions asked by the seniors to the presenter during the Q&A. The findings from questions 4-5 will report any major date and time conflicts that seniors may have for attending the trial. The responses will determine a date for the Royal Foundation to execute the trial run. Additionally, the trial run date will depend on the days that a social worker of the Elderly Line is available to translate and host the meeting. The Elderly Line call center will host the Zoom meeting on an office computer with Zoom downloaded onto it or a computer from one of the project team members.

The team will schedule a meeting with the Royal Foundation administration over email through our contact Cristina Buja. In this meeting, we will suggest the topic idea and a date for the trial meeting to the Royal Foundation. The project team will then work out a final decision on the webinar topic and date for the trial meeting with the Royal Foundation. Afterwards, we will ask that the Royal Foundation arrange for a medical professional with experience in the chosen topic to prepare and present a PowerPoint presentation at the Elderly Line call center during the agreed upon date. With the presentation planned, the Elderly Line will notify their senior clients through group email or website about the date for the trial senior video club. In the notification the Royal Foundation will provide the Zoom guide, data privacy guide, and the GDPR consent form for the seniors to complete prior to joining. As mentioned in the background chapter, the senior video club will last for an hour and have the following events: a 40-minute presentation by the presenter and a 20-minute Q&A moderated by the host for the seniors and presenter. On the

trial run date, the project team will oversee the execution of the trial run at the Elderly Line call center.

3.6.1 Surveying Seniors for Video Club Feedback

Before the trial senior video club concludes, the host will provide a link to the survey (Appendix E) in the Zoom text chat for seniors to provide feedback on the meeting. As with the previous surveys, the team will develop the survey online using Qualtrics survey software prior to the meeting. The team will translate the survey into Romanian using Google Translate and review the translation with someone from the Royal Foundation. The survey will begin by asking the seniors about their thoughts on the presenter and the information presented in the meeting. The findings from this section will determine whether the health topic discussed was relevant for seniors. Furthermore, the seniors will determine whether the presenter was a good choice to deliver the information and qualified to give another presentation. The second section of the survey will ask participants about their comfort with Zoom after participating in a meeting. The findings for this section will help the team evaluate if Zoom was the best platform for the senior video club. The third section will ask seniors if they noticed any flaws or accomplishments in senior video club. The feedback will help identify any issues in the senior video club. The project team will then compile the results from the survey, highlight the major flaws and accomplishments of the meeting as seen from the seniors, and present the findings to the Royal Foundation. The survey will help the Royal Foundation to determine the success of the senior video club and make decisions on how to improve future iterations of the club.

References

- Alexandrescu, R. (2004, May). *Descriptive Epidemiology of Health Problems in Vaslui District, Romania*. <https://wpi.primo.exlibrisgroup.com>
- Antczak, R., & Zaidi, A. (2016). Risk of poverty among older people in EU countries. *CESifo DICE Report*, 14(1), 37–46.
- Aspinall, E. E., Beschnett, A., & Ellwood, A. F. (2012). Health literacy for older adults: Using evidence to build a model educational program. *Medical Reference Services Quarterly*, 31(3), 302–314. <https://doi.org/10.1080/02763869.2012.698174>
- Băjenaru, L., Marinescu, I. A., Dobre, C., Drăghici, R., Hergheliegiu, A. M., & Rusu, A. (2020). Identifying the needs of older people for personalized assistive solutions in Romanian healthcare system. *Studies in Informatics and Control*, 29(3), 363–372. <https://doi.org/10.24846/v29i3y202009>
- Bălăcescu, A., & Babucea, A.-G. (2018). Use of the internet by the romanian citizens. An empirical study of digital gaps between regions. *Annals of the „Constantin Brâncuși” University of Târgu Jiu*, 1, 8.
- Biniok, P., Menke, I., & Selke, S. (2016). Social inclusion of elderly people in rural areas by social and technological mechanisms. In E. Domínguez-Rué & L. Nierling, *Ageing and Technology: Perspectives from the Social Sciences* (pp. 93–118). Transcript Verlag. <https://www.jstor.org/stable/j.ctv1xxrwd.7>
- Bucher-Koenen, T., Lusardi, A., Alessie, R., & van Rooij, M. (2017). How financially literate are women? An overview and new insights. *Journal of Consumer Affairs*, 51(2), 255–283. <https://doi.org/10.1111/joca.12121>
- Caruntu, F., Bordejevic, D. A., Tomescu, M. C., & Citu, I. M. (2021). Clinical characteristics

and outcomes in acute myocardial infarction patients aged ≥ 65 years in Western Romania. *Reviews in Cardiovascular Medicine*, 22(3), 911–918.

<https://doi.org/10.31083/j.rcm2203098>

Chang, S.-H., Wang, L.-T., Chueh, T.-Y., Hsueh, M.-C., Hung, T.-M., & Wang, Y.-W. (2021).

Effectiveness of Facebook remote live-streaming-guided exercise for improving the functional fitness of community-dwelling older adults. *Frontiers in Medicine*, 8, 734812.

<https://doi.org/10.3389/fmed.2021.734812>

Chase, P. H. (2019). *Perspectives on the General Data Protection Regulation of the European Union*. German Marshall Fund of the United States.

<https://www.jstor.org/stable/resrep21227>

Coman, M. A., Forray, A. I., Van den Broucke, S., & Chereches, R. M. (2022). Measuring health literacy in Romania: Validation of the HLS-EU-Q16 survey questionnaire. *International Journal of Public Health*, 67, 1604272. <https://doi.org/10.3389/ijph.2022.1604272>

Cotten, S. R., Ford, G., Ford, S., & Hale, T. M. (2014). Internet use and depression among retired older adults in the United States: a longitudinal analysis. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 69(5), 763–771.

<https://doi.org/10.1093/geronb/gbu018>

Country Report Romania 2020. (2020). EUR-Lex. <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1584543810241&uri=CELEX%3A52020SC0522>

Custers, B., Dechesne, F., Sears, A. M., Tani, T., & van der Hof, S. (2018). A comparison of data protection legislation and policies across the EU. *Computer Law & Security Review*, 34(2), 234–243. <https://doi.org/10.1016/j.clsr.2017.09.001>

Czaja, S. J., & Sharit, J. (2012). *Designing Training and Instructional Programs for Older*

Adults. CRC Press. <https://doi.org/10.1201/b13018>

De Freitas Bradley, C., & Grigorescu, A. (2019). *Comparative Analysis of the Romanian and Luxembourgish Healthcare Systems.*

Eglīte, A., Grīnfeldē, A., Kantiķe, I., & Vintila, M. (2009). Healthy lifestyle in the elderly's view in Romania and Latvia. *Economic Science for Rural Development, 19.*

Emlet, C. A., & Moceri, J. T. (2012). The importance of social connectedness in building age-friendly communities. *Journal of Aging Research, 2012*, 1–9.

<https://doi.org/10.1155/2012/173247>

Foo, S., Majid, S., & Venkata, V. (2014). Health information literacy of senior citizens—a review. *European Conference on Information Literacy.*

GDPR Archives. (2016, April 27). GDPR.Eu. <https://gdpr.eu/tag/gdpr/>

Ghinescu, M., Olaroiu, M., van Dijk, J. P., Olteanu, T., & van den Heuvel, W. J. (2014). Health status of independently living older adults in Romania. *Geriatrics & Gerontology International, 14*(4), 926–933. <https://doi.org/10.1111/ggi.12199>

Gyalai-Korpos, I., Ancusa, O., Dragomir, T., Tomescu, M. C., & Marincu, I. (2015). Factors associated with prolonged hospitalization, readmission, and death in elderly heart failure patients in Western Romania. *Clinical Interventions in Aging, 10*, 561–568.

<https://doi.org/10.2147/CIA.S79569>

Hernández-Quevedo, C., Vlădescu, C., Scîntee, S. G., Olsavszky, V., & Sagan, A. (2016). Romania: Health system review. In *Health Systems in Transition* (No. 18/4; Issue 18/4). World Health Organization, on behalf of the European Observatory on Health Systems and Policies. <http://www.euro.who.int/en/about-us/partners/observatory/publications/health-system-reviews-hits>

- Hickman, J. M., Rogers, W. A., & Fisk, A. D. (2007). Training older adults to use new technology. *The Journals of Gerontology: Series B*, 62(Special_Issue_1), 77–84.
https://doi.org/10.1093/geronb/62.special_issue_1.77
- Hitchins, K. (2013). *A Concise History of Romania*. Cambridge University Press.
<https://doi.org/10.1017/CBO9781139033954>
- Hogan, G. (2021, April 4). “So deep and so rich”: Seniors stay connected via their new life on Zoom. *NPR*. <https://www.npr.org/2021/04/04/983895036/so-deep-and-so-rich-seniors-talk-about-their-new-life-on-zoom>
- Ivan, L., & Fernández-Ardèvol, M. (2017). Older people, mobile communication and risks. *Societies*, 7(2), 7. <https://doi.org/10.3390/soc7020007>
- Ivan, L., & Hebblethwaite, S. (2016). Grannies on the net: Grandmothers’ experiences of Facebook in family communication. *Romanian Journal of Communication and Public Relations*, 18(1), 11–25. <https://doi.org/10.21018/rjcpr.2016.1.199>
- Kamalpour, M., Watson, J., & Buys, L. (2020). How can online communities support resilience factors among older adults. *International Journal of Human–Computer Interaction*, 36(14), 1342–1353. <https://doi.org/10.1080/10447318.2020.1749817>
- Kerr, J., Rosenberg, D., & Frank, L. (2012). The role of the built environment in healthy aging: community design, physical activity, and health among older adults. *Journal of Planning Literature*, 27(1), 43–60. <https://doi.org/10.1177/0885412211415283>
- MacLeod, S., Musich, S., Parikh, R. B., Hawkins, K., Keown, K., & Yeh, C. S. (2018). Examining approaches to address loneliness and social isolation among older adults. *Journal of Aging and Geriatric Medicine*, 2018. <https://doi.org/10.4172/2576-3946.1000115>

- The Margareta of Romania Royal Foundation. (2020a). *The Elderly Line | Fundația Regală Margareta a României*. <https://www.frmr.ro/en/the-elderly-phone/>
- The Margareta of Romania Royal Foundation. (2020b). *What we do | Fundația Regală Margareta a României*. <https://www.frmr.ro/en/what-we-do/>
- Marinescu, V. (2020). Challenges of online health-related information for Romanian seniors. *Anthropological Researches and Studies*, 10(1), 9–18. <https://doi.org/10.26758/10.1.2>
- Marinescu, V., & Rodat, S. (2018). Romanian and German seniors in quest of online health-related information: An exploratory comparative study. *Revista Română de Comunicare și Relații Publice*, 20(1), 25–45.
- Nedelcu, M. (2017). Transnational grandparenting in the digital age: Mediated co-presence and childcare in the case of Romanian migrants in Switzerland and Canada. *European Journal of Ageing*, 14(4), 375–383. <https://doi.org/10.1007/s10433-017-0436-1>
- Newall, N. E. G., & Menec, V. H. (2015). Targeting socially isolated older adults: A process evaluation of the Senior Centre Without Walls Social and Educational program. *Journal of Applied Gerontology*, 34(8), 958–976. <https://doi.org/10.1177/0733464813510063>
- Page, S. (2021, February 22). “Our lifeblood is talking to each other”: elderly “Oprah” leads lively ladies room discussions on Zoom. *National Post*, A.6.
- Parker, R. M., Ratzan, S. C., & Lurie, N. (2003). Health literacy: A policy challenge for advancing high-quality health care. *Health Affairs*, 22(4), 147–153. <https://doi.org/10.1377/hlthaff.22.4.147>
- Pelizäus-Hoffmeister, H. (2016). Motives of the elderly for the use of technology in their daily lives. In E. Domínguez-Rué & L. Nierling, *Ageing and Technology: Perspectives from the Social Sciences* (pp. 27–46). Transcript Verlag.

<https://www.jstor.org/stable/j.ctv1xxrwd.4>

Pleasant, A. (2013). Health literacy around the world: Part 2. *Institute of Medicine Roundtable on Health Literacy*, 111.

Rampioni, M., Moșoi, A. A., Rossi, L., Moraru, S.-A., Rosenberg, D., & Stara, V. (2021). A qualitative study toward technologies for active and healthy aging: A thematic analysis of perspectives among primary, secondary, and tertiary end users. *International Journal of Environmental Research and Public Health*, 18(14), 7489.

<https://doi.org/10.3390/ijerph18147489>

Roland, H., Ilin Shpilberman, Y., Schaub, J., & Comeau, A.-C. (2021). Connection through calls: The impact of a seniors center without walls on older adults' social isolation and loneliness. *Gerontology and Geriatric Medicine*, 7, 23337214211063104.

<https://doi.org/10.1177/23337214211063102>

Romania. (2022). In *The World Factbook*. Central Intelligence Agency. <https://www.cia.gov/the-world-factbook/countries/romania/#people-and-society>

Romania: Household internet access 2007-2020. (2021). Statista.

<https://www.statista.com/statistics/377760/household-internet-access-in-romania/>

Romania—Age structure 2020. (n.d.). Statista. Retrieved February 12, 2022, from <https://www.statista.com/statistics/373125/age-structure-in-romania/>

Sen, K., Prybutok, G., & Prybutok, V. (2022). The use of digital technology for social wellbeing reduces social isolation in older adults: A systematic review. *SSM - Population Health*, 17, 101020. <https://doi.org/10.1016/j.ssmph.2021.101020>

Smith, K. H. (2014). Aging and health literacy. *Journal of Consumer Health on the Internet*, 18(1), 94–100. <https://doi.org/10.1080/15398285.2014.869447>

Tsai, W.-C., Rogers, W. A., & Lee, C.-F. (2012). *Older Adults' Motivations, Patterns, and Improvised Strategies of Using Product Manuals*. 11.

Wolff, J., & Atallah, N. (2021). Early GDPR penalties: analysis of implementation and fines through May 2020. *Journal of Information Policy*, 11(1), 63–103.

<https://doi.org/10.5325/jinfopol.11.2021.0063>

Ziółkowski, A., Błachnio, A., & Pąchalska, M. (2015). An evaluation of life satisfaction and health – Quality of life of senior citizens. *Annals of Agricultural and Environmental Medicine*, 22(1), 147–151. <http://dx.doi.org/10.5604/12321966.1141385>

Appendix A: Royal Foundation Lawyer Interview Questions

Informed Consent Agreement for Participation in a Research Study

Investigator: Kyle Lopez

Contact Information: kjlopez@wpi.edu

Title of Research Study: Using Technology to Promote Healthy Lifestyles for Seniors

Sponsors: The Margareta of Romania Royal Foundation, Telefonul Vârstnicului

Introduction

You are being asked to participate in a research study. Before you agree, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

Purpose of the study:

The purpose of this study is to develop a webinar program for Romanian seniors to participate in and learn about improving their health conditions. The program will attempt to improve health literacy in the Romanian senior community.

Procedures to be followed:

The procedure will follow a 30-45 minute semi-structured interview with the participant. The questions that will be asked are outlined in Appendix A.

Risks to study participants:

There are no foreseeable risks to the participant.

Benefits to research participants and others:

There are no benefits to the participant of this interview.

Record keeping and confidentiality:

Compensation or treatment in the event of injury: You do not give up any of your legal rights by signing this statement.

For more information about this research or about the rights of research participants, or in case of research-related injury, contact:

Investigator Kyle Lopez (Email: kjlopez@wpi.edu)

IRB Manager (Ruth McKeogh, Tel. 508 831-6699, Email: irb@wpi.edu) Human Protection Administrator (Gabriel Johnson, Tel. 508-831-4989, Email: gjohnson@wpi.edu).

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit. Your responses will remain confidential unless given your expressed permission.

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

Date: _____

Study Participant Signature

Study Participant Name (print)

Date: _____

Signature of Person who explained this study

1. Do you have any personal experience with drafting consent forms or providing legal advice on data privacy for companies in Romania?
2. Could you help us understand what information is needed in a GDPR consent form for average consumers to be aware of?
3. Are there any additional aspects of the GDPR, in layman terms, that a consent form will need to address for conducting webinars?
4. In your experience, are there any aspects of the GDPR widely unknown to the average Romanian? Would you feel that an instructional video or guide on GDPR rules helpful for closing this gap in knowledge?
5. For conducting the senior video club in the form of a webinar, are there any special requirements that the host of the club will have to follow after seniors provide their consent?
6. Does the Royal Foundation's role as a social beneficiary and host of the webinars present additional measures to follow under the GDPR?

Appendix B: Royal Foundation Volunteer Interview Questions

Informed Consent Agreement for Participation in a Research Study

Investigator: Mary Braen

Contact Information: mebraen@wpi.edu

Title of Research Study: Using Technology to Promote Healthy Lifestyles for Seniors

Sponsors: The Margareta of Romania Royal Foundation, Telefonul Vârstnicului

Introduction

You are being asked to participate in a research study. Before you agree, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

Purpose of the study:

The purpose of this study is to develop a webinar program for Romanian seniors to participate in and learn about improving their health conditions. The program will attempt to improve health literacy in the Romanian senior community.

Procedures to be followed:

The procedure will follow a 8-10 minute semi-structured interview with the participant. The questions that will be asked are outlined in Appendix B.

Risks to study participants:

There are no foreseeable risks to the participant.

Benefits to research participants and others:

There are no benefits to the participants of this interview.

Record keeping and confidentiality:

Compensation or treatment in the event of injury: You do not give up any of your legal rights by signing this statement.

For more information about this research or about the rights of research participants, or in case of research-related injury, contact:

Investigator Mary Braen (Email: mebraen@wpi.edu)

IRB Manager (Ruth McKeogh, Tel. 508 831-6699, Email: irb@wpi.edu) Human Protection Administrator (Gabriel Johnson, Tel. 508-831-4989, Email: gjohnson@wpi.edu).

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit. Your responses will remain confidential unless given your expressed permission.

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

Date: _____

Study Participant Signature

Study Participant Name (print)

Date: _____

Signature of Person who explained this study

1. Based on your conversations and knowledge of your senior clients, do Romanian seniors have experience with Zoom for socially interacting online? Are seniors using any other social media or communication platform?
2. Without identifying names, what are some health concerns that a typical senior caller would have? Would any of these health concerns affect their ability to use Zoom or participate in surveys?
3. Are there any other special considerations for seniors to keep in mind that would impact their ability to communicate online or participate in surveys?
4. What days (such as holidays) in the next 8 weeks would affect senior availability in participating in surveys or the trial senior video club?
5. Do the seniors engage in social activities other than calling the Elderly Phone line? If so, what are they?
6. What types of information do senior clients typically call the Elderly Line for?
7. How do the seniors respond to health information from online sources?

Appendix C: Senior Survey 1

Subject: Survey of Romanian Seniors

I am writing to you to request your participation in a brief survey. You were selected as a participant because your email is on file with the The Princess Margareta of Romania Foundation as an elderly Romanian. This survey will ask you about your knowledge of Zoom and your rights to data privacy. The results of this survey will help with the implementation of a Senior Video Club, where Romanian elderly will be able to watch video lectures given by medical professionals in order to learn more about living a healthy lifestyle.

The survey is very brief and will only take about 10 minutes to complete. Please click the link below to go to the survey Website (or copy and paste the link into your Internet browser).

Survey Link _____ (The survey has not been created yet)

Your participation in the survey is completely voluntary and all of your responses will be kept confidential. No personally identifiable information will be associated with your responses to any reports of these data.

The WPI Institutional Review Board has approved this survey.

Should you have any comments or questions, please feel free to contact me at TCiolfi@wpi.edu.

Thank you very much for your additional time and cooperation. Feedback from Romanian seniors is very important to us and will be used to design aspects of the Senior Video Club for your benefit.

Sincerely,

Thomas Ciolfi
Student Researcher
WPI

Introductory Information

1. How old are you?
 - a. Younger than 65
 - b. 65-70
 - c. 71-75
 - d. 76-80
 - e. 81-85
 - f. Older than 86
2. Have you ever used Zoom before?
 - a. Yes
 - b. No
3. Have you heard of Zoom before today?
 - a. Yes
 - b. No

Zoom Knowledge

Please rate your confidence in yourself to perform the following actions on Zoom without assistance, from no confidence to high confidence.

Response Options for each action:

- No confidence
- Low confidence
- Moderate confidence
- High confidence

- Prefer not to answer

Actions:

1. Download Zoom onto your computer
2. Join a Zoom Call from a Zoom ID
3. Turn your video feed off and on
4. Mute and unmute yourself
5. Use the Zoom feature to raise and lower your hand

Data Privacy

Please select the answer that accurately represents how much you agree or disagree with each statement.

Response Options for each Statement:

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree
- Prefer not to answer

Statements:

1. I understand my right to be informed of data collected about me.
2. I understand my right to access data collected about me.
3. I understand my right to have incorrect data about me corrected.
4. I understand my right to have my personal data permanently deleted.
5. I understand my right to restrict processing of my personal data

6. I understand my right to data portability.
7. I understand my right to object to processing of my data.
8. I understand my right to not be subject to automated decision making.

Appendix D: Senior Survey 2

Subject: Survey of Romanian Seniors

I am writing to you to request your participation in a brief survey. You were selected as a participant because of your participation in our previous survey regarding knowledge of Zoom and your rights to data privacy. If you have not completed the Zoom and GDPR guides that were sent to you via email, please complete them now before continuing on to take this survey. This survey will ask you to answer many of the same questions as the previous survey in order to gauge the effectiveness of our guides. The results of this survey will help update the guides for seniors to use prior to joining the Senior Video Club, where Romanian elderly will be able to watch video lectures given by medical professionals in order to learn more about living a healthy lifestyle.

The survey is very brief and will only take about 10 minutes to complete. Please click the link below to go to the survey Website (or copy and paste the link into your Internet browser).

Survey Link _____ (The survey has not been created yet. The questions and answers can be found in Appendix D)

Your participation in the survey is completely voluntary and all of your responses will be kept confidential. No personally identifiable information will be associated with your responses to any reports of these data.

The WPI Institutional Review Board has approved this survey.

Should you have any comments or questions, please feel free to contact me at TCiolfi@wpi.edu.

Thank you very much for your time and cooperation. Feedback from Romanian seniors is very important to us and will be used to design aspects of the Senior Video Club.

Sincerely,

Thomas Ciolfi
Student Researcher
WPI

Introductory Information

1. Did you read through the guide titled “Data Privacy”?
 - a. Yes
 - b. No
2. Did you read through the guide titled “How to use Zoom”?
 - a. Yes
 - b. No
3. Did you download Zoom to your device?
 - a. Yes
 - b. No
4. What is your device?
 - a. Computer
 - b. Phone or Tablet
 - c. Other: _____

Zoom Knowledge

Please rate your confidence in yourself to perform the following actions on Zoom without assistance, from no confidence to high confidence.

Response Options for each action:

- No confidence
- Low confidence
- Moderate confidence
- High confidence

- Prefer not to answer

Actions:

1. Download Zoom onto your computer
2. Join a Zoom Call from a Zoom ID
3. Turn your video feed off and on
4. Mute and unmute yourself
5. Use the Zoom feature to raise and lower your hand

Data Privacy

Please select the answer that accurately represents how much you agree or disagree with each statement.

Response Options for each Statement:

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree
- Prefer not to answer

Statements:

1. I understand my right to be informed of data collected about me.
2. I understand my right to access data collected about me.
3. I understand my right to have incorrect data about me corrected.
4. I understand my right to have my personal data permanently deleted.
5. I understand my right to restrict processing of my personal data.

6. I understand my right to data portability.
7. I understand my right to object to processing of my data.
8. I understand my right to not be subject to automated decision making.

Questions about the Guides:

Please select the answer that accurately represents how much you agree or disagree with each statement.

Response Options for each Statement:

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree
- Prefer not to answer

Statements:

1. I found the Data Privacy guide easy to understand.
2. I have a better understanding of my data privacy rights after reading the Data Privacy guide
3. I found the Zoom guide easy to understand
4. I was able to easily download Zoom using the guide

Appendix E: Senior Video Club Feedback Survey

Subject: Survey of Romanian Seniors

I am writing to you to request your participation in a brief survey. You were selected as a participant because you participated in a recent Senior Video Club with the Princess Margareta of Romania Foundation. This survey will ask you about your experience in the Senior Video Club. The results of this survey will help with improving future iterations of the Senior Video Club.

The survey is very brief and will only take about 10 minutes to complete. Please click the link below to go to the survey Website (or copy and paste the link into your Internet browser).

Survey Link _____ (The survey has not been created yet.)

Your participation in the survey is completely voluntary and all of your responses will be kept confidential. No personally identifiable information will be associated with your responses to any reports of these data.

The WPI Institutional Review Board has approved this survey.

Should you have any comments or questions, please feel free to contact me at TCiolfi@wpi.edu.

Thank you very much for your time and cooperation. Feedback from Romanian seniors is very important to us and will be used to improve the Senior Video Club.

Sincerely,

Thomas Ciolfi
Student Researcher
WPI

Feedback on the Presenter:

Please select the answer that accurately represents how much you agree or disagree with each statement.

Response Options for each Statement:

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree
- Prefer not to answer

Statements:

1. The presenter was easy to understand.
2. The presenter spoke to me or other seniors in a respectful manner.
3. The presentation was delivered in an organized and clear manner.
4. I found the information presented relevant to my current lifestyle.
5. I learned something from the presentation to help improve my current health.
6. I would be willing to listen to another presentation from the same presenter.

Feedback on the Zoom Guide:

Please select the answer that accurately represents how much you agree or disagree with each statement.

Response Options for each Statement:

- Strongly disagree

- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree
- Prefer not to answer

Statements:

1. I was comfortable using Zoom throughout the meeting.
2. I feel confident using Zoom to participate in another meeting or other social event.
3. I would prefer to use another online platform (Facebook Live, Skype, etc.) to participate in the meeting.

Feedback on the Senior Video Club Structure:

Please select the answer that accurately represents how much you agree or disagree with each statement.

Response Options for each Statement:

- Strongly disagree
- Somewhat disagree
- Neutral
- Somewhat agree
- Strongly agree
- Prefer not to answer

Statements:

1. I enjoyed the meeting, overall
2. I would be willing to participate in future meetings of the senior video club.
3. I would like more time for the Q&A portion of the meeting.
4. I would like less time for the Q&A portion of the meeting.
5. The presentation should be longer than 40 minutes.
6. The presentation should be shorter than 40 minutes.
7. During the Q&A, the host respectfully and fairly addressed the participants' questions.
8. I would like time in the meeting to socialize with other seniors over Zoom.

Please answer the following questions about improvements for the club.

How could the senior video club program you participated in be improved?

{Free Response}

What did you particularly like about the senior video club, and why?

{Free Response}

Are there any topics on senior health or other issues for seniors that you would like to be addressed by an expert in a future meeting?

{Free Response}