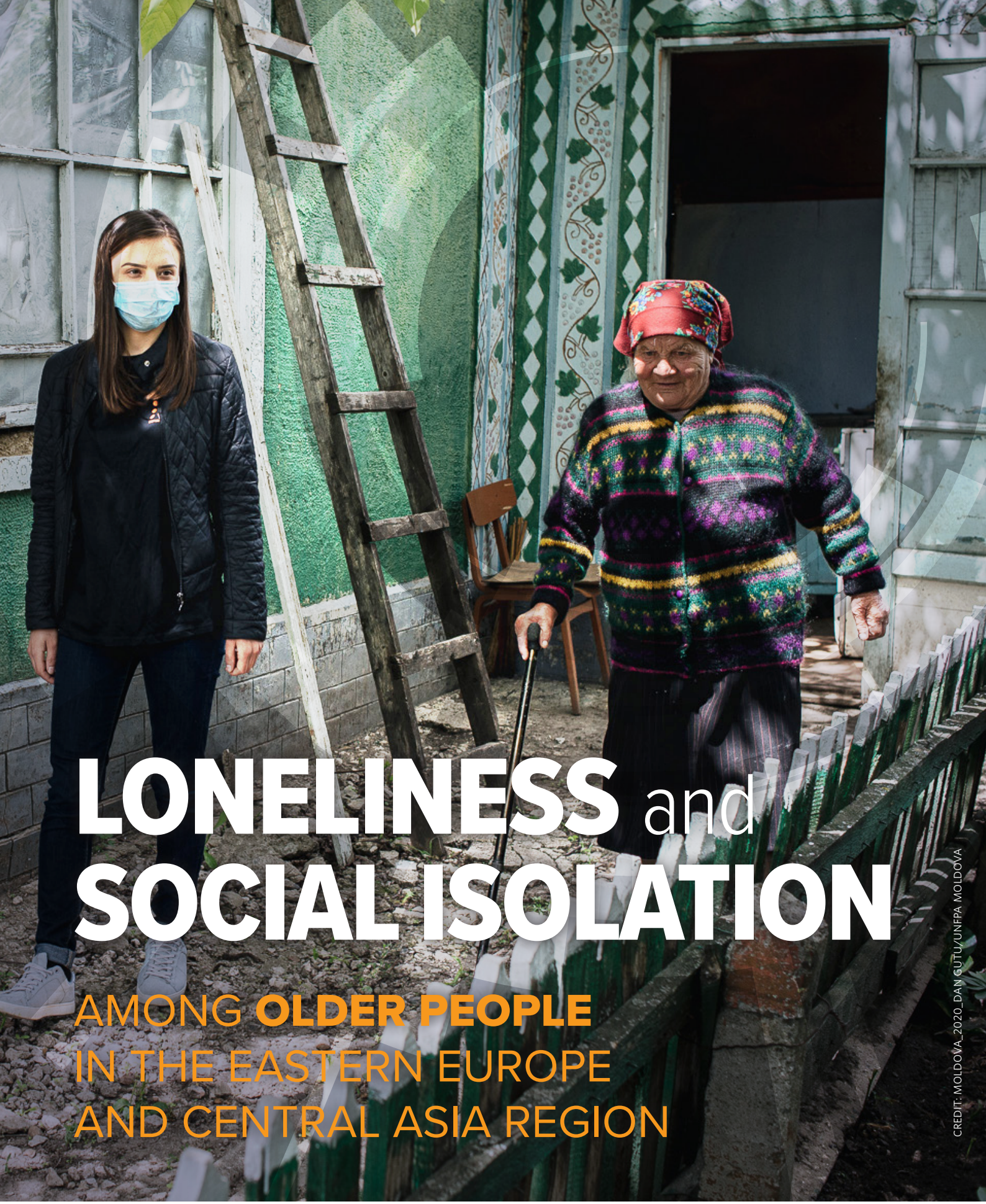

LONELINESS and SOCIAL ISOLATION

AMONG **OLDER PEOPLE** IN THE EASTERN EUROPE AND CENTRAL ASIA REGION

CREDIT: MOLDOVA_2020_DAN GUTU/UNFPA MOLDOVA

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LONELINESS and SOCIAL ISOLATION

AMONG **OLDER PEOPLE** IN THE EASTERN EUROPE AND CENTRAL ASIA REGION

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ACKNOWLEDGEMENTS

This report is the result of a multinational survey on loneliness among older people that was carried out—under sometimes challenging conditions due to the COVID-19 pandemic—in six countries/territories in Eastern Europe and the South Caucasus during the summer of 2021. The survey was implemented under the technical leadership of Professor Tara Keck of University College London and the organizational leadership of Zeljko Blagojevic of UNFPA Bosnia and Herzegovina. The UNFPA country offices in the respective countries and territories were intensively involved in organizing fieldwork and providing comments, while the UNFPA Regional Office for Eastern Europe and Central Asia coordinated the process and produced this report.

We would like to express our appreciation to all those who contributed to the success of this exercise, including the respondents to the survey and the participants in the focus group meetings.

CREDIT: BOSNIA AND HERZEGOVINA_2016_AMER KAPETANOVIC/UNFPA BOSNIA AND HERZEGOVINA

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FOREWORD

As populations in Eastern Europe and Central Asia are ageing rapidly, there is increased attention on the loneliness and social isolation of older people. The COVID-19 pandemic, and the measures taken by governments to contain it, have disproportionately affected older people, among other population groups, and have exacerbated social isolation and loneliness for many.

This survey report, therefore, comes at an opportune time. It is based on a survey conducted during the pandemic and thus captures the effects COVID-19 has had on loneliness and social isolation. It is published at a time when, perhaps, there is greater receptiveness among policymakers and the general public to improve the well-being and respect for the rights of older people as countries emerge from the pandemic and aim to build back better.

With this report, the United Nations Population Fund (UNFPA) and researchers at University College London hope to contribute to a better understanding of the risk factors leading to loneliness and social exclusion.

One - perhaps surprising - key finding of the survey is that it is not so much a lack of emotional support, but a lack of tangible support for day-to-day tasks and activities that is associated with loneliness.

We hope this—and other findings and recommendations included in the report—will help policymakers, authorities, civil society and individuals provide the support and services older persons need to maintain their physical and mental health and well-being and remain active and engaged in society.

Tackling loneliness in older people is a key element in our efforts to help create societies for all ages.

Alanna Armitage
Director
UNFPA Regional Office for Eastern Europe and Central Asia

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EXECUTIVE SUMMARY

There is a global shift towards an ageing population. Internationally, the percentage of people over the age of 65 is projected to increase from 9 per cent in 2019 to 25 per cent in 2050. In parts of Eastern Europe and Central Asia, a combination of an extended lifespan, decreasing fertility and, in some cases, outward migration has already resulted in a rapid trend towards an ageing population. While an ageing population is a positive reflection of medical advances and longer life, there are also a number of challenges associated with an increase in the number of older people, particularly related to health and well-being.

One critical health risk for older people is loneliness, which has been shown to affect large fractions of older populations. Loneliness is a risk factor for ageing-related diseases and is detrimental for healthy ageing. Even though loneliness has as high a mortality risk as regular smoking or obesity, there has been relatively little effort put towards addressing loneliness in older people. Part of the challenge is that there are many potential risk factors that can contribute to loneliness. The emotional aspects of loneliness are well-established, such as not having someone to talk to or confide in about your problems. However, loneliness can also result from not having the necessary tangible support for day-to-day activities, such as preparing meals, doing household chores, going to the doctor or going out for a coffee. A deficit in either of these areas can result in loneliness, but addressing each of these factors would require different approaches. Thus, it is critical to understand the key risk factors for loneliness in the targeted population in order to develop the appropriate approach to reduce loneliness.

To investigate the degree of loneliness and the underlying risk factors that contribute to loneliness in Eastern Europe and Central Asia, University College London (UCL) and the United Nations Population Fund (UNFPA) conducted a survey on loneliness for older people (65-85 years) in six countries/territories in Eastern Europe and Central Asia: Albania, Azerbaijan, Bosnia & Herzegovina, Georgia, Serbia, and Kosovo[1].

The survey found that 79 per cent of older people were at least moderately lonely, with 18 per cent being extremely lonely, which was consistent across the six countries/territories. The survey showed that there were four primary contributors to loneliness in the population.

1 All references to Kosovo should be understood to be in the context of the United Nations Security Council resolution 1244 (1999).

- Tangible support: having the support to carry out necessary day-to-day tasks such as preparing meals, doing household chores or going to the doctor. Lower tangible support scores were associated with high levels of loneliness. These results emphasize the importance of basic day-to-day support for older people who need it.
- Social network size: the total number of friends and family. Smaller social networks were associated with higher levels of loneliness. People with larger social networks were less lonely.
- Social support: having someone to do something enjoyable with. People with less social support were lonelier. Eighty six per cent of people who had low levels of loneliness answered that they often or always had someone to do something enjoyable with. Conversely, 28 per cent of people with high levels of loneliness said that they often or always had someone to do something enjoyable with.
- Social confidence: how nervous someone is when meeting new people and how much they worry about how they are being perceived socially. Lower levels of social confidence were associated with higher levels of loneliness, suggesting people with anxieties surrounding social interactions are more likely to be lonely.

Importantly, these risk factors are largely related to having someone to provide support for basic social and life activities. We found no association between levels of emotional support and loneliness. This suggests that, in this population, the provision of basic day-to-day support for older people would be most effective in addressing loneliness.

Several other risk factors were more mildly associated with loneliness: living alone, overall happiness, having sought support for mental health, hearing difficulties, lack of affectionate support, closeness of relationships, and desire for additional social interactions. A number of other demographic measures were not associated with loneliness, including marital status, gender, living in urban or rural areas, satisfaction with financial situation, overall health status, Internet access and usage, or the types of social activities undertaken before or during the COVID-19 pandemic.

When the data were separated by country or territory, there was variability in the risk factors for each country or territory, even though the loneliness levels were similar across all of the countries and territories. This indicates the complexity of the causes of loneliness and the importance of surveying the population to identify the relevant risk factors so that the appropriate interventions can be applied for a given population.

The overall recommendations, which are detailed in the report, fall into these areas:

- Establish national policies that protect the rights and dignity of older people, with an emphasis on their health and well-being.
- Implement programming both locally and nationally to provide targeted tangible support for older people. This could include mobile medical visits at home, community volunteers to provide day-to-day support, or phone or virtual medical and social support. Community members will be in the best position to identify the most appropriate approaches to meet the specific needs of the local community. Developing targeted group activities could be one effective way to create and expand social networks for older people, which could provide community-based tangible support.

- Establish day centres for older persons or other similar venues for the organization of group activities and as a place for older people to meet and receive support.
- Plan activities in hearing-friendly environments and promote hearing health care for older people.
- Create programming for all ages to emphasize healthy ageing throughout the lifespan with a focus on preventative measures and to promote intergenerational networks and volunteerism.
- Create programmes to help eliminate prejudices and stereotypes about the roles and contributions of older people in society and to promote non-discriminatory language related to ageing in society.

PHOTO: ARMENIA_2018_HOVHANNES DASHTOYAN/UNFPA ARMENIA

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REPORT

Due to a combination of increased longevity, low birth rates and migration of young people, countries and territories in Eastern Europe and Central Asia have an increasingly ageing population, which comes with a number of health and medical challenges. In addition to physical issues associated with ageing, older people experience a number of mental challenges as they age. These include social disconnectedness, which encompasses both loneliness and social isolation. Both of these are prevalent in older people, with as many as three-quarters of older people reporting that they often feel lonely (Keck, 2020; Masi et al., 2011). Both loneliness and social isolation are key risk factors for ageing-related diseases and are detrimental for healthy ageing. While loneliness and social isolation have long been reported in older people, this effect has increased during social restrictions introduced during the COVID-19 pandemic (Savage et al., 2021). Thus, the need to address these risk factors for older people has become even more urgent. To understand the frequency and risk factors associated with loneliness, UCL and the UNFPA conducted a survey on loneliness in six countries/territories in Eastern Europe and Central Asia: Albania, Azerbaijan, Bosnia and Herzegovina, Georgia, Serbia, and Kosovo.

Ageing situation in selected Eastern European and Central Asian countries/territories

All of the populations of the participating countries/territories are in an advanced stage of the demographic transition: where the demographics of a population changes from high fertility and high mortality to low fertility and low mortality. One net effect of this transition is an ageing population, since the number of older people rapidly increases. This transition to an older population has evolved to varying degrees in each of the six participating countries/territories (Table 1).

Location	Age	1990	2020	2050
Albania	65+	5.5	14.7	26.4
Albania	80+	0.9	2.9	9.1
Azerbaijan	65+	4.6	6.7	17.5
Azerbaijan	80+	1.0	1.3	3.9
Bosnia and Herzegovina	65+	6.6	17.9	30.4
Bosnia and Herzegovina	80+	1.2	3.8	10.0
Georgia	65+	9.3	15.3	21.8
Georgia	80+	1.7	3.7	6.1
Serbia	65+	9.6	21.1	26.6
Serbia	80+	1.8	4.7	7.3
Kosovo	65+	Not available	9.0	22.3
Kosovo	80+	Not available	1.7	5.9

TABLE 1: Percentage of older people (65+ and 80+) of the total population in each country/territory over the past 30 years, with projections for 2050 (World Population Prospects, Statistical Office of the Republic of Serbia and Kosovo Agency of Statistics).

Albania is experiencing negative population growth, with high life expectancy (78.5 years), low fertility rates (1.37 children per woman) and a high migration rate (-5.24/1000 population/year). This has resulted in a reduction of its population by one-third in the past 30 years and a shift towards an ageing population, with 14.7 per cent of the population over the age of 65.

Azerbaijan currently has a growing population, which is relatively young compared to the rest of the region. Currently 6.7 per cent of the population are over the age of 65, but projections suggest this will increase to 17.5 per cent of the population by 2050. Life expectancy (72.9 years) and fertility rates are high (children per woman), and changes in population due to migration are negligible (UNFPA/UNDP, 2015).

In Bosnia and Herzegovina, 17.9 per cent of the population is currently over 65 years old, with projections for this to significantly increase. Fertility rates are among the lowest in the world at 1.2 children per woman and life expectancy is high at 77.2 years. The estimated net outward migration rate is also high, all contributing to the significantly ageing population.

Georgia has experienced a nearly one-third reduction of its population over the past 30 years and a shift towards an older population with 15.3 per cent of the population currently over 65 years old. Georgia has a high net negative migration rate (-2.2/1000 population/year) and a life expectancy of 73.6 years; however, fertility rates are high in Georgia at 2.1 children per woman.

Serbia has an ageing population with 21.1 per cent of the current population over 65 years old, the highest rate of all the countries/territories in this study. This is due to a low rate of fertility (1.48 children per woman), extended life expectancy (74.2 years) and a negative migration balance. Within Serbia, there has been a demographic shift for younger people to move to urban areas, with Belgrade and Vojvodina being the only areas with positive migration rates in the country (Statistical Office of the Republic of Serbia, 2021).

Finally, Kosovo is also starting to see shifts towards an ageing population, with a decreasing fertility rate (2.42 children per woman in 2011 to 1.66 children per woman in 2019), an extended life expectancy (72.5 years) and a negative net migration rate (-1.44/1000 population/year). While the population over 65 years old is currently 9 per cent, it is projected to increase to over 22 per cent by 2050.

Overall, these data point to a demographic shift to an ageing population across Eastern Europe and Central Asia that has taken place over the past 30 years and will continue to increase over the next decades. Thus, it is critical to start planning for the challenges associated with an ageing population, including ageing-related diseases, loneliness and isolation and the general well-being and rights of older people.

Social disconnectedness – loneliness and social isolation

One area that strongly affects older people is social disconnectedness, which includes both social isolation and loneliness. These two aspects are often linked, but measure two different components of a lack of social interaction. Social isolation is an objective measure, reflecting the frequency of social interactions, or how often a person sees and interacts socially with other people (Beller and Wagner, 2018a, b). Loneliness, on the other hand, is a subjective measure, reflecting whether people feel like they have enough close friends and acquaintances. Some people may feel like they need dozens of friends and acquaintances in order not to feel lonely, while others only need a small handful of friends and family to feel socially fulfilled. The subjectivity of loneliness makes it more complicated to measure quickly. Thus, a number of studies in the past have not separated loneliness and social isolation, which has been problematic for developing appropriate support for older people (Beller and Wagner, 2018a, b). Because loneliness and social isolation result in different health risks for older people and require different approaches for support, differentiating these two aspects is critical for developing interventions to address social disconnectedness in older people.

Furthermore, within loneliness, there are two linked components. *Emotional loneliness* (Masi et al., 2011) occurs when a person lacks close relationships and confidants, and generally reflects the quality of one's relationships. *Social loneliness* (Domenech-Abella et al., 2017) occurs when a person lacks an extensive social network, and reflects the quantity of one's social relationships. While these two measures are often correlated for individuals, changes that occur during ageing may predominantly affect one area. For example, the death of a spouse or close friend could preferentially increase emotional loneliness, but an illness that reduces social mobility could decrease the ability to attend regular social events and thereby increase social loneliness. Both components are

important for health, but they pose different critical risks for older people's health and well-being. A lack of quality social relationships—typically associated with emotional loneliness—is linked to increases in cardiovascular disease (Knox and Uvnas-Moberg, 1998; Yang et al., 2016) and depression (Santini et al., 2015) and is a risk factor for dementia (Livingston et al., 2017). A reduced social network—largely associated with social loneliness—has been shown to have a high-mortality-risk in older people. The risk is as high as regular smoking or obesity, and is more strongly correlated with a decrease in lifespan than physical inactivity (Holt-Lunstad et al., 2010).

What are the underlying risk factors for loneliness?

Risk factors for loneliness can include a number of specific events and situations, for example, the death of a spouse, retirement or living alone (social isolation), are all associated with an increase in loneliness (Masi et al., 2011). Other effects associated with ageing, such as mobility issues and hearing loss, as well as more challenging financial situations that many older people face in retirement, can reduce the ability to participate in social activities or make those interactions more difficult and, therefore, more likely to be avoided (Masi et al., 2011).

Loneliness can also arise from a lack of tangible support. For example, people who do not have support to carry out day-to-day tasks if they are unwell, such as preparing meals or going to the doctor, report higher levels of loneliness (Masi et al., 2011; Sherbourne and Stewart, 1993). The absence of other types of support that are critical for loneliness include: a lack of emotional support, where people do not have anyone to talk to about their life or problems; a lack of social support, where people do not have anyone to join them for an enjoyable activity or to have fun; and a lack of affectionate support, where people do not have anyone to make them feel loved. Other risk factors for loneliness include not having enough opportunity for social interactions or a large enough social network to facilitate the support that one needs.

A lack of social confidence or feeling anxious in social situations can also be a risk factor for loneliness. Indeed, interventions that address social confidence—which includes introducing forms of basic mental health support to help address a negative mindset surrounding social interactions—have been consistently successful in reducing loneliness (Masi et al., 2011). A lack of support in any of the areas discussed above can result in an increase in feelings of loneliness and social disconnectedness (Masi et al., 2011; Sander, 2005; Sherbourne and Stewart, 1993), but ideal approaches to address each risk factor would be different. Therefore, it is critical to understand the relevant risk factors that contribute to loneliness in a population to develop targeted interventions to address loneliness.

Loneliness survey

A recent survey of older people in Bosnia and Herzegovina (Keck, 2020) found that while many older people were attending social events in the community, more than 75 per cent of older people reported that they often feel lonely. This high level of reported loneliness in older people is consistent with reports from many countries (Caycho-Rodriguez et al., 2021; van Tilburg et al., 2004). To better understand this risk factor during ageing, UCL and UNFPA developed a follow-up

survey to investigate social disconnectedness, including loneliness and social isolation, in older people throughout Eastern Europe and Central Asia in Albania, Azerbaijan, Bosnia and Herzegovina, Georgia, Serbia, and Kosovo. This survey examined: 1) the degree to which older people report feeling lonely in different countries/territories, 2) the demographics (gender, age, urban/rural living, family situation, Internet availability, socioeconomic status, health status) of lonely people, including measures of social isolation, 3) the availability of tangible support needed for day-to-day tasks, such as preparing meals, doing household work and receiving medical care, and 4) the social factors that contribute to feelings of loneliness, including opportunities for social interaction, social or affectionate support and social confidence. Identifying the prevalent risk factors in this group of older people will inform interventions that would have the largest potential to address loneliness in this specific group of older people.

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SURVEY ANALYSIS

Loneliness

The survey first used an established loneliness scale to measure the degree to which older people are lonely in Eastern Europe and Central Asia (van Tilburg et al., 2004). In this scale, respondents are asked a series of six questions addressing social loneliness and five questions addressing emotional loneliness. These two scores are then added to give an overall loneliness score out of 11, with a score of 0 being not lonely at all and a score of 11 being very severely lonely. Typically, scores establish a range of loneliness: absence of loneliness (scores 0 to 2), moderately lonely (scores 3 to 8), severely lonely (scores 9 to 10), and very severely lonely (scores 11) (van Tilburg et al., 2004). Across Eastern Europe and Central Asia, the median loneliness score was 6 out of 11, with 79 per cent of respondents scoring above 3 (at least moderately lonely) and 18 per cent falling into the categories of severely lonely or very severely lonely (Figure 1). Scores were evenly split between emotional and social loneliness. These data are consistent with past studies globally that show older people report high levels of loneliness (Caycho-Rodriguez et al., 2021; Keck, 2020; Masi et al., 2011; Uysal-Bozkir et al., 2017; van Tilburg et al., 2004).

Identifying predictive risk factors

A model was developed to determine which risk factors from the survey were predictive of the loneliness score (see appendix 1). Eleven variables significantly contributed to the loneliness scores: network size, living alone, tangible support available, overall happiness, having sought support for mental health, hearing difficulties, positive social support available, affectionate support available, closeness of relationships, desire for additional interactions and social confidence. Figure 2 shows their relative contributions to loneliness.

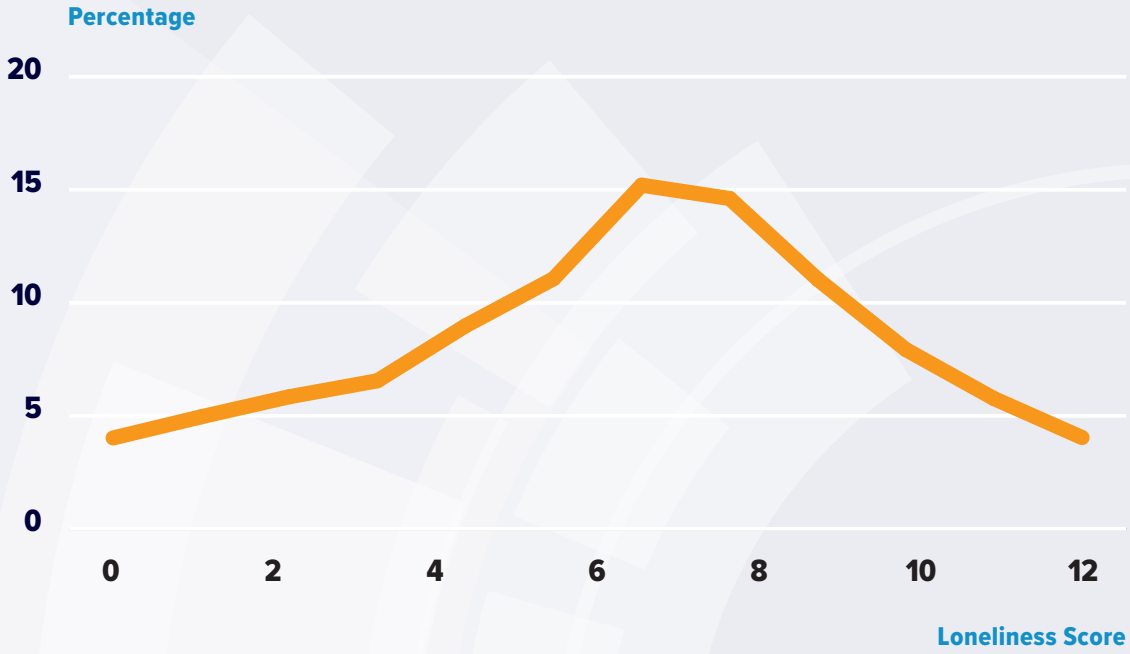

FIGURE 1: Loneliness score across the entire population. Each point on the graph indicates the percentage of people with that loneliness score (e.g., 15% people had a score of 6). Loneliness was quantified as follows: absence of loneliness (scores 0 to 2), moderately lonely (scores 3 to 8), severely lonely (scores 9 to 10), and very severely lonely (score 11). A majority of respondents (79%) were at least moderately lonely.

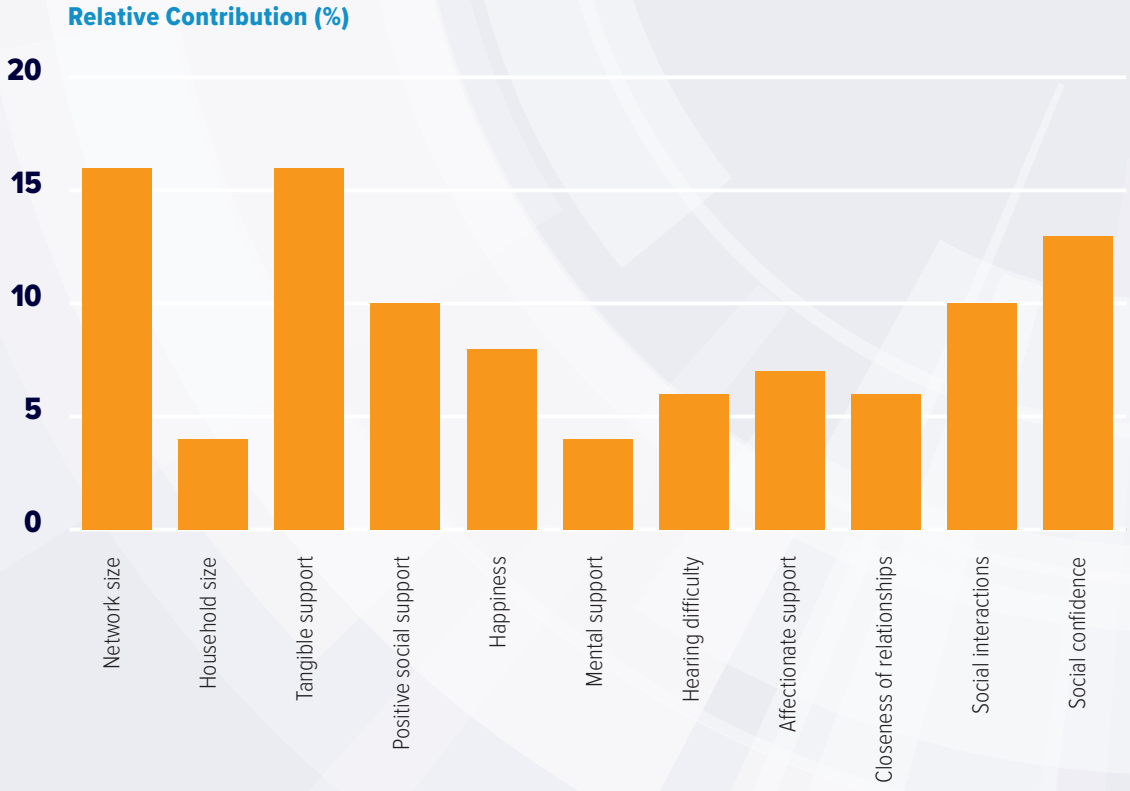

FIGURE 2: Each risk factor has a relative contribution to the loneliness score (out of 100%), Network size, tangible support, social confidence and positive social support have the largest contributions to high loneliness scores across the population.

Size of support network

Consistent with the previous literature (Beller and Wagner, 2018a, b; Masi et al., 2011), the size of a person's social network (total number of close family and friends) was predictive of loneliness (16 per cent relative contribution; Figure 3). People who live alone also have a higher loneliness score than those who live with at least one other person (household size 1: loneliness score 6.65; household size 2+; loneliness score 5.29). This result of people living alone reporting higher levels of loneliness has been previously reported in the literature (Beller and Wagner, 2018a; Masi et al., 2011), indicating the consistency of this survey with earlier studies. These two results indicate that a higher loneliness score is associated with a lower number of people in a social network or household.

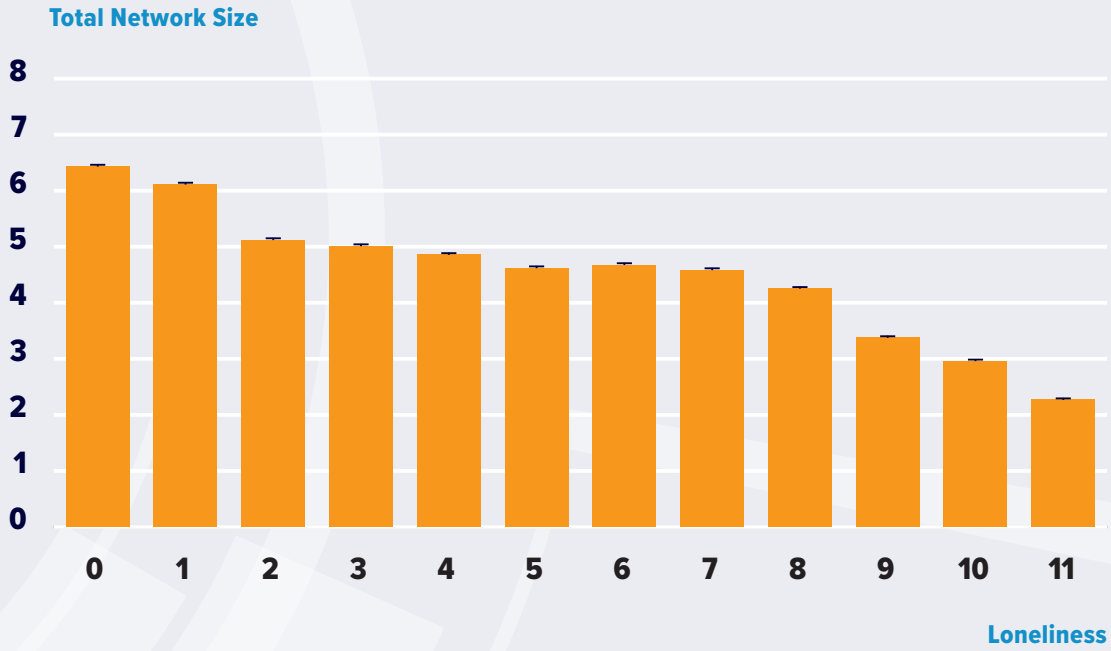

Figure 3: Mean network size (total sum of close family and friends) for each loneliness scale score (0 low loneliness, 11 high loneliness). Lower loneliness scores (0-1) were associated much larger total network sizes (6+ people) compared to higher loneliness scores (9-11), which were associated with much smaller networks (2-3 people).

Interestingly, increasing network size beyond 7-8 people did not have much effect on loneliness scores on average, suggesting that developing a larger network does not reduce loneliness for most people. This network size is smaller than what older individuals often think is necessary for a healthy social network (Beller and Wagner, 2018a; Masi et al., 2011) and knowledge of the benefits of a smaller network may be reassuring to older people who are more introverted or nervous about engaging in social activities.

Support for daily tasks and activities

A lack of tangible support—or having support to carry out necessary day-to-day tasks—was also associated with increased loneliness. The tangible support score was calculated by summing a number of measures, including having support if one is sick to help with chores, preparing meals or going to the doctor. Having a higher tangible support score means that a person has the necessary support if they need assistance with their day-to-day life. Higher tangible support scores were associated with lower levels of loneliness (16 per cent relative contribution; Figure 4). These results emphasize the importance of basic day-to-day life support for older people who need it.

It is important to note that in the population surveyed here, the people were living at home and not in assisted-living care. Research has shown that older people have improved mental and physical health outcomes when they can continue to live somewhat independently (Beller and Wagner, 2018a). Targeted assistance can often be effective in delaying the need for full-time assisted-living (i.e., home-care services, full-time live-in help from a family member or medical professional). Ensuring that older people have access to assistance when needed for basic tasks such as shopping, meal preparation, medical care and home chores could extend the period of safe and happy independent living and the well-being of older people. A combination of formal local services, informal community networks or helplines could provide assistance. This would expand health support that is available to people at home, through 1) home visits from mobile health and social services, 2) an increase in virtual or phone services that have been trialled in a number of countries during the COVID-19 pandemic, and 3) community networks that check-in on older people living alone, could help improve tangible support for older people related to their social and medical care.

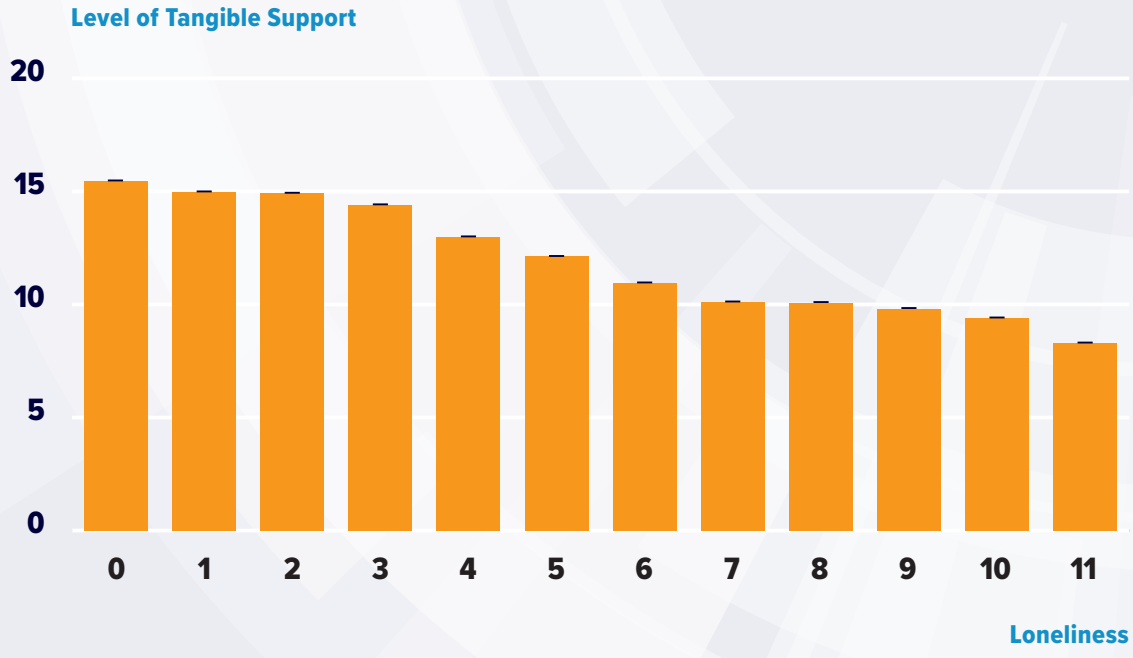

Figure 4: Mean level of tangible support (16, highest level of tangible support) for each loneliness scale score. Lower loneliness (0-2) scores were associated with high levels of tangible support, such that people would have help with their day-to-day activities (meals, chores and medical visits) if they needed it. Conversely, high loneliness scores (9-11) were associated with lower levels of tangible support, suggesting that people without basic support for daily needs reported higher levels of loneliness.

Next, positive social support, which quantifies the frequency of having someone to do something fun or enjoyable with, was inversely associated with loneliness (10 per cent relative contribution; Figure 5). In other words, a lower loneliness score was associated with a higher level of positive social support. Specifically, 86 per cent of people who had low loneliness scores (scale: 0-2) answered that they often or always had someone to do something enjoyable with. Conversely, only 28 per cent of people with high loneliness scores (scale: 9-11) said that they often or always had someone to do something enjoyable with.

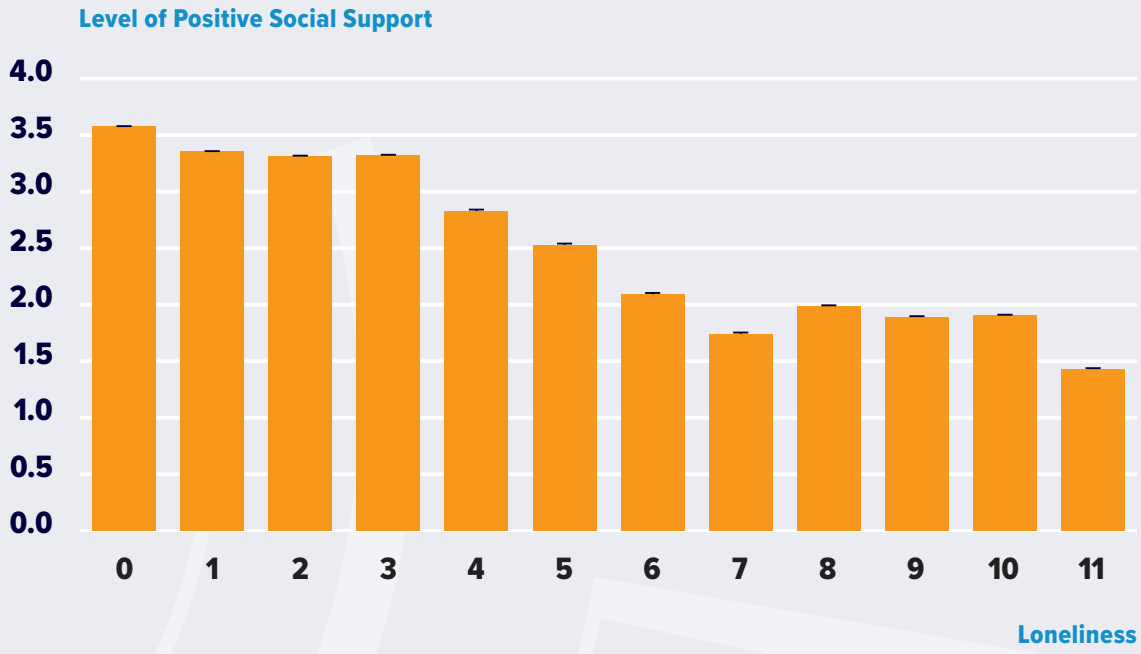

Figure 5: Mean positive social support level (0 is low support, 4 is the highest support) for each loneliness scale score. Lower loneliness scores (0-2), where associated with higher levels of positive social support, meaning that people who were less lonely often or always had someone to do a fun social activity with. Higher loneliness scores (9-11) were associated with lower levels of positive social support, meaning that people who were lonelier were less likely to have someone to do fun social activities with.

While positive social support in theory only requires one outside person to engage in activities, having a larger social network can help increase the feeling of positive social support, as a bigger network provides more options for people to engage in social activities (Beller and Wagner, 2018a; Sherbourne and Stewart, 1993). Furthermore, a larger network is more resilient to life changes for people in the social network. For example, people who move away to live closer to their adult children, people who move into assisted-living facilities, death, or a medical condition that limits social interaction. These factors indicate that network size may be an important risk factor to target for loneliness interventions.

To date, fewer interventions have been tested for the risk factors associated with day-to-day support (Masi et al., 2011; Sander, 2005), but addressing these risk factors may hold the most promise for addressing loneliness in this cohort. Creating programming and activities to increase people's network size could potentially address three risk factors: network size, creating positive social support (having someone to do fun activities with) and tangible support (having someone to assist with daily activities if necessary). However, simply offering more activities for individuals does not necessarily result in them increasing their social networks. Research shows that group activities are most successful in addressing loneliness and expanding social networks when they are targeted, involve an educational component and the repeated participation of the same group of people (Michela et al., 1982; Sander, 2005). The development of regular activities for older people with a clear objective—rather than just hosting social get-togethers—would be most effective in creating social support and networks of people who can help one another when needed and, thus, reduce loneliness (Masi et al., 2011; Rook, 1984; Sander, 2005).

Specifically, older people could come together in groups to be trained to use technologies that could help connect them further. While Internet usage was not a predictive factor for loneliness in this study, a large fraction of older people still do not have access to the Internet or the skills to use it (Todorovic et al., 2019). Classes that build confidence in the safe use of technologies and provide access to the Internet could be effective in building social networks and developing skills for older people. This approach could be particularly effective in communities with high levels of migration, as confidence with technologies may allow for older people to better connect with children and grandchildren who live abroad.

Health related risk factors

Next, the mental and physical health measures that are risk factors for loneliness in the population were identified. Perhaps unsurprisingly, reported levels of overall happiness were inversely associated with loneliness (8 per cent relative contribution). People who were less lonely were happier (or vice versa). Furthermore, if a person had sought mental health support from a doctor, clinical psychologist or therapist, there was an increase in loneliness (4 per cent relative contribution). Interestingly, a large fraction of people in the population had sought mental health support (81 per cent of respondents) across all loneliness scores. This suggests that people are both comfortable seeking mental health support and admitting that they have received it in this survey.

Finally, difficulties with hearing were predictive of loneliness (6 per cent relative contribution; Figure 6), such that low loneliness scores are associated with low hearing difficulty scores. Eighty per cent of people with low loneliness scores (0-2) either never (hearing score 0) or rarely (hearing score 1) had issues with their hearing that affected their day-to-day life, while 57 per cent of people with high loneliness scores (9-11) reported having hearing issues some of the time (hearing score 2), often (hearing score 3) or all of the time (hearing score 4). While a number of issues could explain the link between hearing difficulties and loneliness, one explanation is that many older people will experience progressive hearing loss, where at first they can still hear well in a quiet environment, and thus would still pass any hearing tests administered by a doctor, but will struggle to hear when there is background noise, like in restaurants, cafes or large group activi-

ties (World Health Organization, 2021b). Difficulties with hearing in these social situations can result in the avoidance of social interactions, and thus potentially increase loneliness. Given that a majority of older people will experience some degree of hearing loss, this is a critical risk factor to address.

While hearing aids can help improve difficulties with hearing, only up to a third of people with hearing loss have hearing aids and within that group, only a fraction regularly use them (World Health Organization, 2021b). There are a number of reasons that prevent the widespread usage of hearing aids, including the stigma associated with hearing loss and the use of hearing aids, the lack of rehabilitative services associated with the fitting and use of hearing aids and the limited effectiveness of hearing aids in environments with high levels of background noise (Barnett et al., 2017; World Health Organization, 2021b).

To help address issues of hearing difficulties in older people, group activities can be planned in quiet environments without high levels of background noise. This will make these activities more inclusive for those with varying degrees of hearing loss. Furthermore, campaigns on the importance of hearing health care and promoting the benefits of using hearing aids (for example, better interactions with grandchildren), as well as screening hearing health in older people, has been effective in increasing hearing aid uptake in older populations (Yueh et al., 2010). Efforts to encourage and educate older people about hearing health care could have positive effects on the connection between hearing difficulties and loneliness.

Other demographic measures were not predictive of loneliness. These include marital status, gender, living in urban or rural areas, satisfaction with financial situation, overall health status, Internet access and usage, and, somewhat surprisingly, activities before or during the COVID-19 pandemic.

Emotional support from friends and family

Affectionate support, or having someone to make you feel wanted and loved, was also predictive of loneliness in the population (7 per cent relative contribution; Figure 7). Lower loneliness scores were associated with higher affectionate support. Eighty six per cent of people who had low loneliness scores (0-2) answered that they often or always had someone who made them feel loved and wanted. Conversely, 32 per cent of people with high loneliness scores (9-11) answered that they often or always had someone who made them feel loved and wanted. Unfortunately, there are no interventions to date that have been tested to address this risk factor, but it is an important area for future research.

Finally, the level of closeness of relationships, which was measured as the closeness score of the single individual that the person is closest to in their life (1-5, 1 is low and 5 is high), was mildly associated with loneliness in this cohort (6 per cent relative contribution). Ninety-five per cent of people with low loneliness scores (0-2) reported high levels of closeness (4-5), while 63 per cent of people with high loneliness scores (9-11) also reported high levels of closeness (4-5). These data indicate that a large fraction of the surveyed population have close relationships.

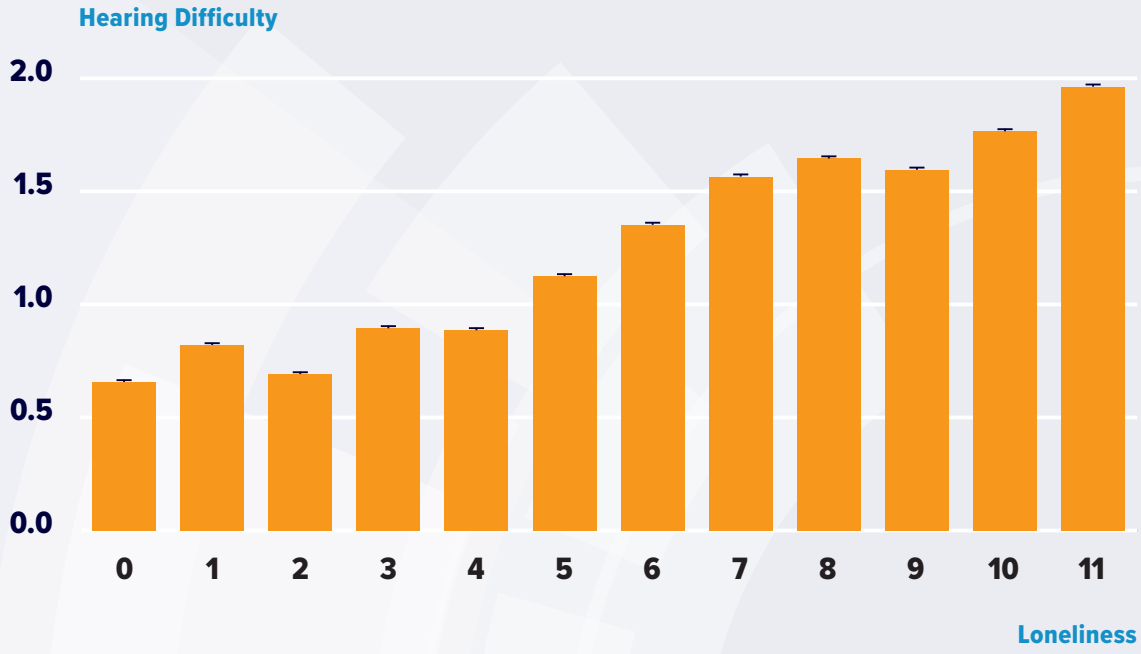

FIGURE 6: Mean hearing difficulty (0, no issues with hearing to 5, issues with hearing all of the time) for each loneliness scale score. Low loneliness scores (0-2) were associated with low levels of hearing difficulty (0-1) with hearing issues occurring never (0) or rarely (1). Higher loneliness scores (9-11) were associated with higher levels of hearing difficulty, with respondents having difficulties with their hearing some of the time (2), often (3) or all of the time (4).

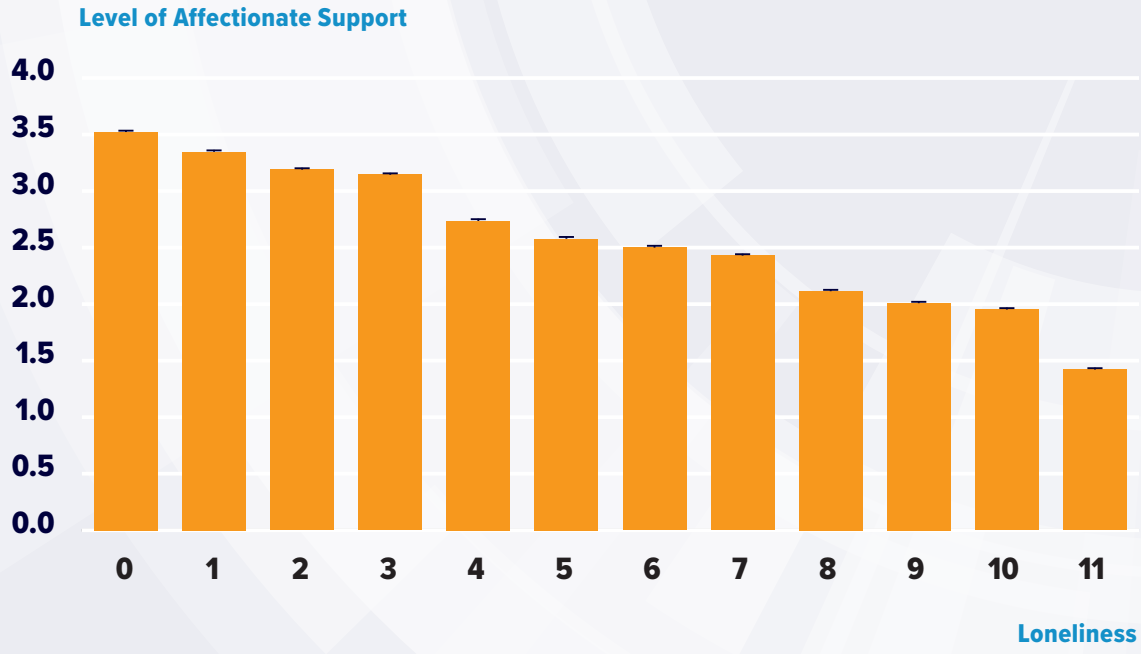

FIGURE 7: Mean affectionate support level (0 low, 4 high) for each loneliness scale score. Lower loneliness scores (0-2), where associated with higher levels of affectionate support, meaning that people who were less lonely often or always had someone to make them feel loved or wanted. Higher loneliness scores (9-11) were associated with lower levels of affectionate support, meaning that people who were lonelier were less likely to have someone to make them feel loved or wanted.

Related to emotional support, there was no significant association between loneliness and feelings of belonging with close friends or family, or belonging in the community for the population. Furthermore, in this cohort there was no significant effect of emotional support of having someone to talk to about problems or issues. This result suggests that mentoring or befriending programmes, which are some of the more commonly implemented programmes for older people (Findlay, 2003), may not be as effective with the group of respondents in this study, but programmes with a focus on developing the tangible or practical support aspects of relationships may have more impact.

While tangible support, but not emotional support, was a risk factor for loneliness, it is possible that tangible support reflects a more immediate and urgent need for older people. If people are worried that they cannot get to the doctor, prepare meals or care for themselves, they may place a higher priority on this need than emotional needs, such as having people to talk to and confide in. Once these physical needs are met, loneliness may remain, but with risk factors related to emotional support. Further research into the dynamics of loneliness and how risk factors may interact and change over time will be necessary to separate these effects.

Opportunities for interaction

Increasing opportunities for interaction is another commonly implemented intervention for older people who are lonely (Sander, 2005). In the survey, respondents were asked how often they wished to have more opportunities for interactions with other people (scale of 0-4 from none of the time to all of the time). This measure was predictive for loneliness (10 per cent relative contribution). Higher levels of wanting increased social opportunities were generally associated with higher loneliness scores; however, across all loneliness scores, the median response was that people desired additional interactions some of the time. These data indicate that most older people would welcome additional opportunities for interaction.

Social confidence

Finally, the survey examined social confidence in older people, asking about how nervous they are when meeting new people and how much they worry about how they are being perceived socially. Lower scores of social confidence were associated with higher loneliness scores (13 per cent relative contribution; Figure 8), suggesting people with anxieties surrounding social interactions are more likely to have higher loneliness scores. These results are consistent with other studies (Masi et al., 2011; Sander, 2005). One explanation for these results is that, for many older people, social interactions have been facilitated through work and family activities throughout their adult lives. Major life changes, such as retirement, children moving away from home or moving to a new home (to be closer to adult children, for example), can disrupt social networks and require the re-establishment of social relationships for the first time in a long while.

Interventions addressing social confidence that help build social skills or provide one-to-one mental health support to combat negative social mindsets have been successful, but can be time and cost intensive (Masi et al., 2011; Sander, 2005). An alternative approach is group mental health

support activities, which create a social network for participants and address social confidence issues. These group programmes are much cheaper to run and are more successful than one-to-one support, as the group infrastructure supports the person beyond the duration of the training (Garland et al., 2016; Mahoney et al., 2019). Group mental health programmes that address social confidence skills may also help improve close personal relationships, which could potentially address the risk factor of a lack of affectionate support (Holt-Lunstad et al., 2010; Rook, 1984; Sander, 2005), although this has yet to be tested.

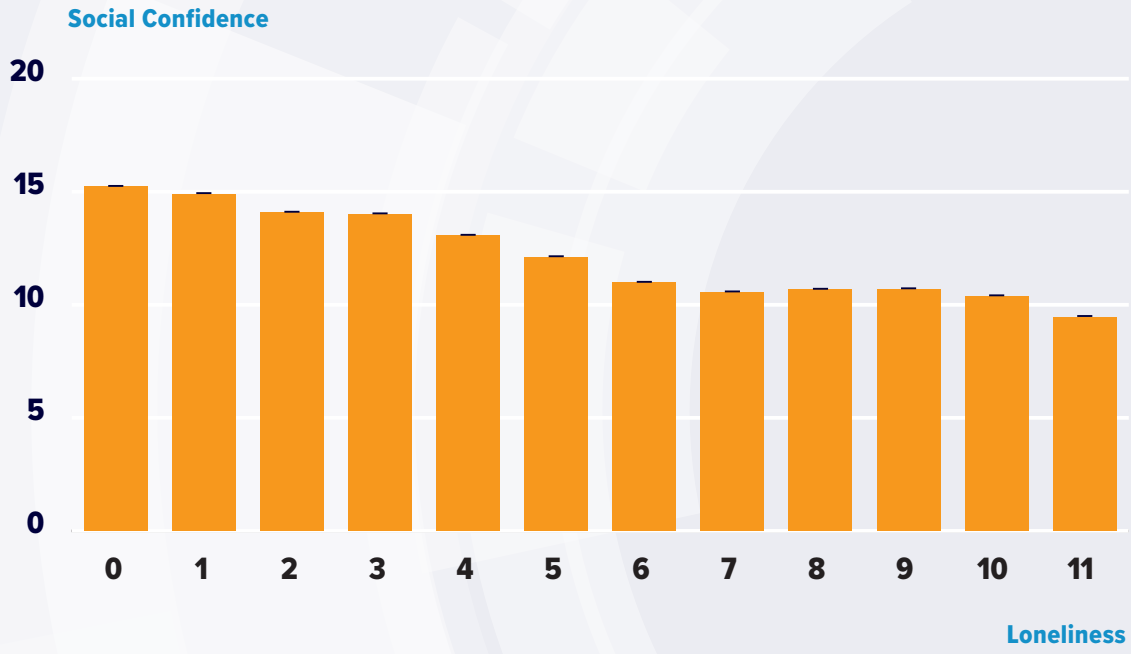

FIGURE 8: Mean social confidence score for each score on the loneliness scale. Lower loneliness scores (0-2), where associated with higher levels social confidence, while higher loneliness scores (9-11) were associated with lower levels of social confidence.

Country/Territory breakdown

While this report primarily focuses on the data across Eastern Europe and Central Asia as a whole, data can also be separated into measures in the individual countries/territories. First, the median loneliness scores were consistent across the different countries/territories (Figure 9), with no statistical differences between the countries/territories. Even though the median loneliness scores were similar, the relative contributions of risk factors for loneliness varied across countries/territories, with differences in the specific risk factors that were the largest contributors. The relative contribution for each risk factor for each country/territory is shown in Figure 10. Each square is colour-coded to represent the relative percentage contribution of that risk factor for loneliness in that country/territory's population, with lighter colours representing larger contributions.

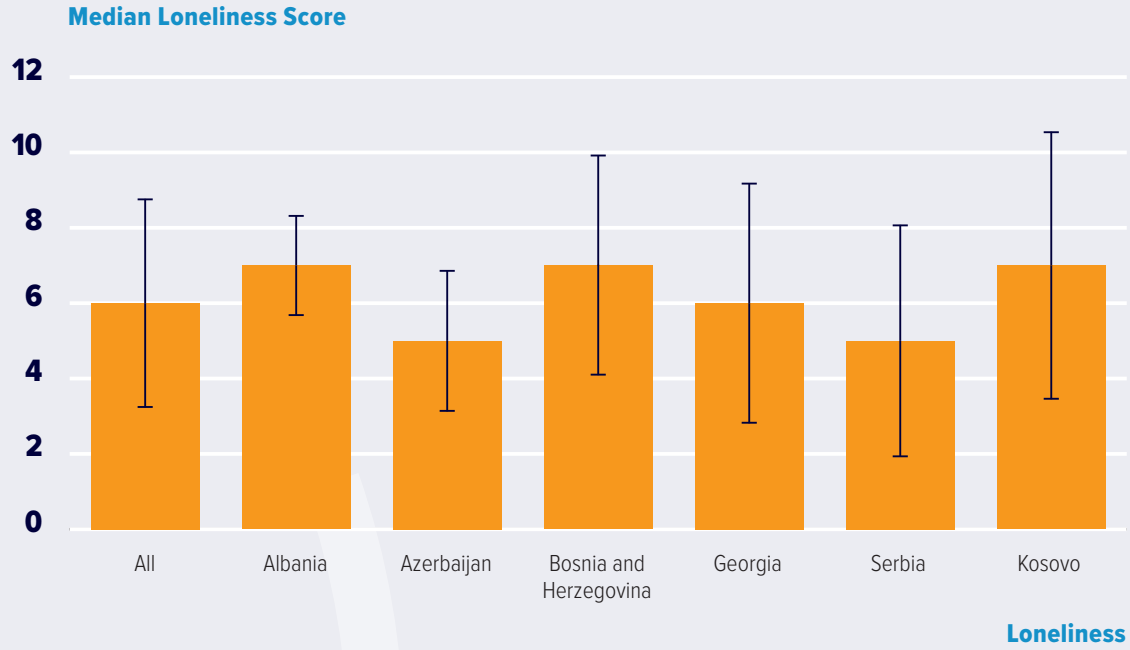

FIGURE 9: Median loneliness score for each country/territory. Across the different countries/territories, there are not significant differences between loneliness scores.

Similar to the overall population, Albania had significant risk factors of social confidence (20 per cent relative contribution) and tangible support (36 per cent relative contribution). These results suggest that interventions that provide older people with day-to-day support—and help develop social skills—could be highly effective in addressing loneliness. Albania also had a risk factor of belonging with family and friends (44 per cent relative contribution). Increasing social and relationship skills that address social confidence could also increase feelings of belonging, as negative social mindsets may foster feelings of doubt about social belonging (Sander, 2005; Yorke, 2016).

Azerbaijan had a large number of significant risk factors, each playing a roughly equal role. First, tangible support (11 per cent relative contribution) and positive social support (9 per cent relative contribution) were risk factors for loneliness, suggesting that programmes that increased day-to-day support for older people could be effective. The population also had significant risk factors of wanting additional social interactions (8 per cent relative contribution) and feelings of belonging in the community (11 per cent relative contribution), indicating that group community activities could be another area to focus interventions. Health factors were also significant, including happiness (13 per cent relative contribution) and receiving mental health support (11 per cent relative contribution). Social confidence (8 per cent relative contribution) and closeness of relationships (12 per cent relative contribution) were also significant factors, as was satisfaction with one's financial situation (17 per cent relative contribution). Azerbaijan was the only country in the region that had both financial situation and belonging to the community as significant risk factors. Examining financial support for older people and community attitudes towards older people could be important in this population.

Bosnia and Herzegovina had risk factors that were quite similar to the overall population of Eastern Europe and Central Asia. This includes tangible support (15 per cent relative contribution), positive social support (11 per cent relative contribution), network size (23 per cent relative contribution), household size (6 per cent relative contribution) and a desire for increased interactions (8 per cent relative contribution). Social confidence was also a significant risk factor (24 per cent relative contribution), as was happiness (7 per cent relative contribution) and hearing difficulties (6 per cent relative contribution). Recommendations, similar to those for Eastern Europe and Central Asia, would include a focus on creating purposeful group activities to build networks that provide day-to-day support, in environments suited to those who are hard of hearing.

Consistent with the overall population, Georgia also had significant risk factors in tangible support (25 per cent relative contribution), network size (27 per cent relative contribution) and desire for additional interactions (13 per cent relative contribution), as well as receiving mental health support (16 per cent relative contribution) and social confidence (19 per cent relative contribution). These risks point to the need for larger social networks that support older people's day-to-day needs, and increase their social confidence. Developing programming for groups of older people to help social skills and address negative social mindsets could be effective at reducing loneliness.

Serbia had significant risk factors in positive social support (49 per cent relative contribution), network size (29 per cent relative contribution) and satisfaction with health (22 per cent relative contribution). Creating opportunities for older people to increase their social networks and, therefore, have additional people to do something enjoyable with (positive social support) could help address loneliness. Additionally, Serbia was the only country with overall health as a risk factor for loneliness. This suggests that approaches to improve health outcomes, such as innovative ways of delivering remote health care in the community, could be effective in this population.

Kosovo had four significant risk factors: network size (21 per cent relative contribution), positive social support (14 per cent relative contribution), belonging with family and friends (52 per cent relative contribution) and receiving mental health support (13 per cent relative contribution). A focus on programming that helps expand social networks may have positive effects on belonging with family and friends, as well as having someone to do something fun with (positive social support).

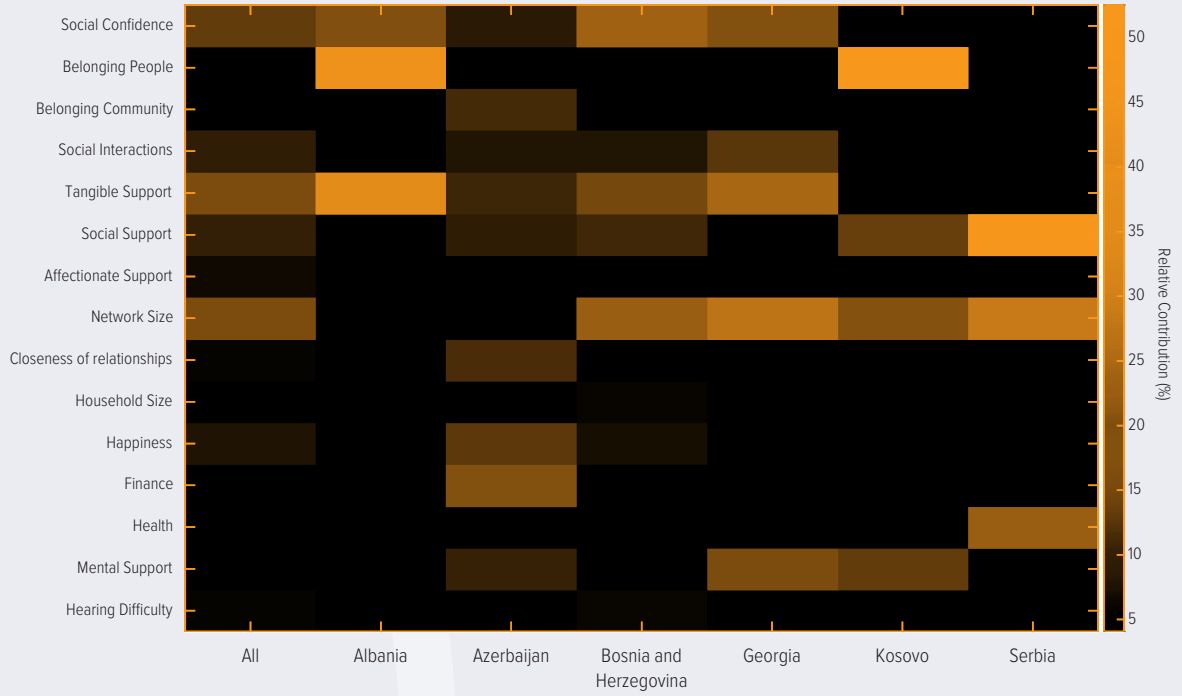

FIGURE 10: Relative contribution (percentage out of 100) for each risk factor in each country/territory. The colorbar is coded for the relative percentage for each factor. White/yellow represent higher percentages of the relative contribution of the risk factor, whereas darker colors represent lower percentage of the relative contribution. Black means a non-significant risk factor contribution. Each country/territory's relative contributions are normalized within country/territory. Different risk factors have different relative contributions for individual countries/territories.

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CONCLUSIONS AND RECOMMENDATIONS

UCL and UNFPA conducted a survey to examine loneliness and the associated risk factors in older people in six countries/territories in Eastern Europe and Central Asia – Albania, Azerbaijan, Bosnia and Herzegovina, Georgia, Serbia, and Kosovo. Consistent with previous studies (Caycho-Rodriguez et al., 2021; van Tilburg et al., 2004), the survey showed that many older people experience loneliness (79 per cent of the population, with 18 per cent experiencing extreme loneliness). A series of risk factors associated with loneliness were identified – with a number of them common to most of the countries/territories. Given that loneliness is a risk factor for a large number of ageing-related diseases and is detrimental for healthy ageing (Holt-Lunstad et al., 2010), it is critical to address this issue for the well-being of older people.

Across the population, high loneliness scores tended to be associated with: smaller social networks of family and friends; a lack of tangible support; difficulties with hearing; a lack of positive social support (or someone to do fun things with); a lack of someone to make one feel loved and social confidence. An individual with a high loneliness score (9-11) did not have a high risk in all of these areas. They tended to have a single or small number of risk factors that resulted in a high loneliness score and the particular combination of risk factors varied per individual. So, while many people were experiencing loneliness, the associated factors varied from person to person. Other key demographic measures were not predictive of loneliness, including marital status, gender, living in urban or rural areas, Internet access and usage, and activities before or during the COVID-19 pandemic.

To ensure that support is offered to all older people—independent of the community they live in—policy development at the national level is necessary to ensure their rights and well-being. This need for policies to protect older people was also highlighted in the World Health Organization report on ageism (World Health Organization, 2021a) and the baseline report for the Decade of Healthy Ageing 2021-2030 (World Health Organization, 2020). Once national policies and guidelines are established, people working at the local and community level will likely be in the best position to identify local challenges and to develop programmes and interventions that will meet local needs. For example, providing optimal day-to-day support for older people may require a different approach in urban and rural areas, where access limitations may differ.

Preventative approaches to healthy ageing

Given the high costs of treating age-related diseases, preventative interventions to promote healthy ageing could provide a cost-effective way to reduce medical and societal costs associated with an ageing population and provide increased quality of life for older people. In general, a healthy lifestyle (including regular exercise, a healthy diet, no smoking, moderate-to-low alcohol use and regular social interaction) is associated with a reduction of many age-related diseases (Kaeberlein et al., 2015; Rossman et al., 2018), or a delay in their onset age, including dementia, cancer, stroke and heart-related diseases (Partridge et al., 2018). Unfortunately, there has been a relatively limited focus on preventative measures for healthy ageing. UCL and UNFPA's recent study (Keck, 2020) suggested that the promotion of healthy ageing in Healthy Ageing Centres in Bosnia and Herzegovina is associated with a lifestyle that will result in 0.8 additional disease free years for women and 1.9 additional disease free years for men. Such centres could be ideal locations for the implementation of group learning activities, educational sessions regarding loneliness and hearing health, and health screenings for older people, among other interventions.

It is also important to emphasize that the promotion of healthy ageing would ideally start long before people are 65 years old. Creating healthy lifestyles, both socially and physically, is essential throughout life. Thus, there should be an emphasis on policies and programming to support healthy lifestyles. This could include age-appropriate lessons on healthy lifestyles in schools—as well as cross-generational programming for adults—focused on regular exercise, healthy diets, positive social interactions and support. Educational group activities—that are a part of a loneliness intervention and address other risk factors for ageing (such as diet or exercise)—could help address loneliness while promoting healthy ageing more generally.

Targeted support for loneliness

Finally, the survey showed that the risk factors for people with high loneliness scores were variable and they often only had high risk in one or two areas. This result points to the fact that loneliness is a complex issue and there are many potential underlying factors. This idea is further supported in the country/territory-specific data, in which dominant risk factors vary for different countries/territories in the region, despite the countries/territories having similar loneliness scores. These results speak to the importance of matching the intervention with what the individuals, or the targeted population, need. However, historically, this has not been common practice. Conducting surveys of the population before developing programming and interventions to identify which risk factors play a prevalent role in loneliness will allow the development of interventions targeted at the appropriate risk factors. This is likely to increase the efficacy of these interventions.

Overall recommendations

- Establish national policies that protect the rights and dignity of older people, with an emphasis on their health and well-being.
- Implement programming both locally and nationally to provide targeted tangible support for older people. This could include mobile medical visits at home, the provision of day-to-day

support by community volunteers, or phone or virtual medical and social support. Community members will be in the best position to identify the most appropriate approaches to meet the specific needs of the local community.

- Create programming for all ages to emphasize life-long healthy ageing with a focus on preventative measures and the promotion of intergenerational cooperation and volunteerism.
- Establish day centres for older persons or other similar venues for the organization of group activities and as a place for older people to meet and receive support.
- Develop targeted regular group activities for older people to learn particular skills (for example, Internet/technology skills, positive social mindset, or social skills), which could be a cost-effective way of simultaneously addressing a number of risk factors, including network size, tangible support, positive social support, affectionate support and social confidence.
- Plan activities in quiet, hearing-friendly environments to be inclusive of older people with hearing difficulties.
- Encourage medical screenings for hearing difficulties and education surrounding hearing health care.
- Create programmes, using best practices recommended in the report on ageism (World Health Organization, 2021a), to help eliminate prejudices and stereotypes about the roles and contributions of older people in society and to promote non-discriminatory language related to ageing in society.

CREDIT: BOSNIA AND HERZEGOVINA_2016_AMER KAPETANOVIC-UNPFA BIH

APPENDIX 1: METHODOLOGY

Survey

A questionnaire survey was developed to identify associated causes and potential interventions for older people who experience loneliness. The questionnaire used a combination of existing scales to address loneliness, which have been previously validated in the cohort (over 65 years old). The survey included questions about demographic information, adapted from the UK Bio-Bank survey (UK BioBank, https://www.ukbiobank.ac.uk/), which was used in UCL and UNFPA's previous study in Bosnia and Herzegovina (Keck, 2020). Demographic questions include: place of residency (location/urban/rural), gender, age, marital status, education level, employment status, socioeconomic status, household size (living alone or with others), engagement with family, engagement with community, Internet access and computer abilities, daily habits, other forms of social engagement and health status. Loneliness was assessed using the 11 item De Jong Gierveld Loneliness Scale. Questions on structural isolation were taken from Beller and Wagner (2018a). Tangible, emotional, social and affectionate support were measured using the Medical Outcomes Social Support Survey (Sherbourne and Stewart, 1993). Belonging to the community and family/friends was measured using the Sense of Belonging Survey (Yorke, 2016). The final questionnaire included 51 questions and took between 15-35 minutes per respondent. The survey was implemented by partners in each country/territory – either by professional surveying companies or National Statistical Offices. Surveys were conducted in the local language using Computer Assisted Personal Interview technologies and were done in person.

Sampling

The target population was people who are between 65 and 85 years old, with an equal split between genders. The sample was determined by the surveying partner to be representative of the country/territory population, using a multi-stage stratified approach, with stratification by region

and by urban or rural areas, with sampling proportional to population size. Specific regions and urban/rural were chosen randomly and within each sampling point, households were selected using a random walk. When multiple people fulfilled the selection criteria within a household, the person with the birthday closest to the current date was chosen. Each country/territory sampled approximately 1000 participants (Albania 1068; Azerbaijan 1000; Bosnia and Herzegovina 1000; Georgia 1000; Serbia 1010; Kosovo 1013). Participants were split between genders (female: 3048, male: 3043).

Data analysis

To measure loneliness, each of the items on the De Jong Gierveld Loneliness Scale were scored with either 1 or 0, with negative items scoring 1 point if the answers were affirmative or neutral and positive items scoring 1 point if the answers were negative or neutral. These values were first summed in the categories of emotional or social loneliness, then combined to get a final score between 0 and 11 (with 11 being extremely lonely) (van Tilburg et al., 2004). For the Medical Outcomes Social Support Survey, each answer between 1-4 was summed to get a score for tangible support, emotional support, positive social support and affectionate support. Higher scores indicate higher levels of support (Sherbourne and Stewart, 1993). Network size was calculated as the total network of family and friends together (Beller and Wagner, 2018a, b). Relationship closeness was calculated as the closeness score of the single individual that the person is closest to (Beller and Wagner, 2018a, b). Family and friends (people) and community belonging were calculated as the sum of the questions at the level of community or individuals (those someone is closest to) (Yorke, 2016). The social confidence was a sum of the cognitive social questions, with negative items being scored inversely.

To analyse the data, a linear regression model was used to identify the significant risk factors for loneliness. These risk factors included: household size, hearing health, overall health, financial satisfaction, mental health support, happiness, social confidence, country/territory, tangible support, affectionate support, positive social support, belonging to the community, belonging with friends and family, desired number of interactions, network size, and closest friend/family. Relative contributions were calculated by normalizing all significant coefficients for risk factors from the model and then calculating the relative percentage of each factor out of 100 per cent. Percentages were calculated for each country/territory individually and across the entire population of Eastern Europe and Central Asia.

REFERENCES

Barnett, M., Hixon, B., Okwiri, N., Irungu, C., Ayugi, J., Thompson, R., Shinn, J.B., and Bush, M.L. (2017). Factors involved in access and utilization of adult hearing healthcare: A systematic review. Laryngoscope *127*, 1187-1194.

Beller, J., and Wagner, A. (2018a). Disentangling Loneliness: Differential Effects of Subjective Loneliness, Network Quality, Network Size, and Living Alone on Physical, Mental, and Cognitive Health. J Aging Health *30*, 521-539.

Beller, J., and Wagner, A. (2018b). Loneliness, social isolation, their synergistic interaction, and mortality. Health Psychol *37*, 808-813.

Caycho-Rodriguez, T., Tomas, J.M., Hontangas, P.M., Ventura-Leon, J., Burga-Leon, A., Barboza-Palomino, M., Reyes-Bossio, M., Pena-Calero, B.N., and White, M. (2021). Validation of the De Jong Gierveld Loneliness Scale in Peruvian old adults: a study based on SEM and IRT multidimensional models. J Gen Psychol, 1-25.

Domenech-Abella, J., Lara, E., Rubio-Valera, M., Olaya, B., Moneta, M.V., Rico-Uribe, L.A., Ayuso-Mateos, J.L., Mundo, J., and Haro, J.M. (2017). Loneliness and depression in the elderly: the role of social network. Soc Psychiatry Psychiatr Epidemiol *52*, 381-390.

Findlay, L. (2003). Human rights and mental health. Br J Psychiatry *183*, 77.

Garland, E.L., Roberts-Lewis, A., Tronnier, C.D., Graves, R., and Kelley, K. (2016). Mindfulness-Oriented Recovery Enhancement versus CBT for co-occurring substance dependence, traumatic stress, and psychiatric disorders: Proximal outcomes from a pragmatic randomized trial. Behav Res Ther *77*, 7-16.

Holt-Lunstad, J., Smith, T.B., and Layton, J.B. (2010). Social relationships and mortality risk: a meta-analytic review. PLoS Med *7*, e1000316.

Kaeberlein, M., Rabinovitch, P.S., and Martin, G.M. (2015). Healthy aging: The ultimate preventative medicine. Science *350*, 1191-1193.

Keck, T. (2020). Changes in behaviors and the projected health benefits for members of healthy ageing centres in Bosnia and Herzegovina. UNFPA Technical Report.

Knox, S.S., and Uvnas-Moberg, K. (1998). Social isolation and cardiovascular disease: an atherosclerotic pathway? Psychoneuroendocrinology *23*, 877-890.

Livingston, G., Sommerlad, A., Orgeta, V., Costafreda, S.G., Huntley, J., Ames, D., Ballard, C., Banerjee, S., Burns, A., Cohen-Mansfield, J., *et al.* (2017). Dementia prevention, intervention, and care. Lancet *390*, 2673-2734.

Mahoney, A., Karatzias, T., and Hutton, P. (2019). A systematic review and meta-analysis of group treatments for adults with symptoms associated with complex post-traumatic stress disorder. J Affect Disord *243*, 305-321.

Masi, C.M., Chen, H.Y., Hawkley, L.C., and Cacioppo, J.T. (2011). A meta-analysis of interventions to reduce loneliness. Pers Soc Psychol Rev *15*, 219-266.

Michela, J.L., Peplau, L.A., and Weeks, D.G. (1982). Perceived dimensions of attributions for loneliness. J Pers Soc Psychol *43*, 929-936.

Partridge, L., Deelen, J., and Slagboom, P.E. (2018). Facing up to the global challenges of ageing. Nature *561*, 45-56.

Rook, K.S. (1984). Promoting Social Bonding – Strategies for Helping the Lonely and Socially Isolated. Am Psychol *39*, 1389-1407.

Rossman, M.J., LaRocca, T.J., Martens, C.R., and Seals, D.R. (2018). Healthy lifestyle-based approaches for successful vascular aging. J Appl Physiol *125*, 1888-1900.

Sander, R. (2005). Preventing social isolation and loneliness among older people: a systematic review of health promotion interventions. Nurs Older People *17*, 40.

Santini, Z.I., Koyanagi, A., Tyrovolas, S., and Haro, J.M. (2015). The association of relationship quality and social networks with depression, anxiety, and suicidal ideation among older married adults: Findings from a cross-sectional analysis of the Irish Longitudinal Study on Ageing (TILDA). J Affect Disord *179*, 134-141.

Savage, R.D., Wu, W., Li, J., Lawson, A., Bronskill, S.E., Chamberlain, S.A., Grieve, J., Gruneir, A., Reppas-Rindlisbacher, C., Stall, N.M., *et al.* (2021). Loneliness among older adults in the community during COVID-19: a cross-sectional survey in Canada. BMJ Open *11*, e044517.

Sherbourne, C.D., and Stewart, A. (1993). The MOS Social Support Survey. RAND Corporation *RP-218*.

Todorovic, N., Vracevic, M., Basic, G., Milijkovic, N., and Matijevic, B. (2019). Ageing and Digital Inclusion – Baseline Study with Recommendations. Belgrade: Red Cross of Serbia.

Uysal-Bozkir, O., Fokkema, T., MacNeil-Vroomen, J.L., van Tilburg, T.G., and de Rooij, S.E. (2017). Translation and Validation of the De Jong Gierveld Loneliness Scale Among Older Migrants Living in the Netherlands. J Gerontol B Psychol Sci Soc Sci *72*, 109-119.

van Tilburg, T., Havens, B., and de Jong Gierveld, J. (2004). Loneliness among older adults in The Netherlands, Italy, and Canada: a multifaceted comparison. Can J Aging *23*, 169-180.

World Health Organization (2020). Decade of healthy ageing: baseline report. Geneva.

World Health Organization (2021a). Global report on ageism. Geneva.

World Health Organization (2021b). World Report on Hearing.

Yang, Y.C., Boen, C., Gerken, K., Li, T., Schorpp, K., and Harris, K.M. (2016). Social relationships and physiological determinants of longevity across the human life span. Proc Natl Acad Sci U S A *113*, 578-583.

Yorke, M. (2016). The development and initial use of a survey of student 'belongingness', engagement and self-confidence in UK higher education. Assess Eval High Edu *41*, 154-166.

Yueh, B., Collins, M.P., Souza, P.E., Boyko, E.J., Loovis, C.F., Heagerty, P.J., Liu, C.F., and Hedrick, S.C. (2010). Long-Term Effectiveness of Screening for Hearing Loss: The Screening for Auditory Impairment-Which Hearing Assessment Test (SAI-WHAT) Randomized Trial. J Am Geriatr Soc *58*, 427-434.


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