



## RESEARCH ARTICLE

# COVID 19-Based Isolation of Senior Citizens: Considerations and a Tool to Improve Communication with Family and Friends

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### Abstract

In our article we want to shortly discuss the interdisciplinary interaction between social factors, especially isolation, in elderly persons, health and communication in the context of the present COVID 19 pandemic. We further want to present a small low barrier, low-cost, easily available Internet-and standard technology based tool to provide socially isolated elderly persons with access to social interaction in the present critical situation.

**Keywords:** Seniors, Depression, Social isolation, Technical tools, Public health and social structures, Pandemia, COVID 19

### Introduction

COVID 19 has globally led to severe changes in medical, social and economical structures that affects all populations [1] mainly because of the widespread governmental interventions to reduce social contacts, and to a lesser degree due to hospitalisation and increased load in specialized intensive care units. Recent studies have demonstrated that especially elderly citizens are at a special risk [2, 3] in regard to the high lethality when exposed to the new virus.

According to recent more interdisciplinary and critical articles, the abuse of often distorted interpretations of statistics [4] to justify far ranging measures affecting the whole population with the already mentioned multilevel impact must be expected not only to reach this members of the general population, but also directly and indirectly impact on the life of the elderly and their caregivers and social networks. The singular focus on social distancing and breaking down of contacts with all groups but including the elderly as main risk group without adequate research on and support for countermeasures to address their isolation [3], and further social, economical and medical needs must be seen as a considerable and probably irresponsible shortcoming of present strategies [5, 6]. In this context it must also be considered, that in many countries with traditional, Universalist and community oriented structures care for the elderly is usually provided by the close integration into their families, who also take the burden of medical and nursing care, that is usually taken over by professional institutions and networks such as nursing homes or 24 hour home nursing services paid by the government or by family members. It

can be expected, that the impact of the pandemic and the measures to address it, to do not only change from country to country, but might affect elderly people and their networks in different ways in the global perspective. Still nearly no publications or published interventions have addressed this question so far.

Isolation as a psychosocial, but also medical risk factor for old people have been identified [7] as major challenges, especially on the background of rising life expectancy and a change in the demographic structures in many especially industrialized countries. As part of the aging process, social networks and social support decrease out of a number of factors, while at the same time the ability to cope flexibly with new situations and mobilize financial of psychological resources must be expected to be reduced. Access to social networks at the same time becomes more crucial, which makes the threat of additional isolating factors, either through government interventions without proper compensation strategies or through the general development in a society during a pandemic more serious. Physical and psychological stressors, such as physical illness, and bereavement of partners, other family members or friends cannot anymore be balanced by social support, that has been described as a key protective factor in physical and psychological health [8, 9]. The close integration of physical and psychological

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aspects has been described by psychosomatic research [10] and in the framework of the biopsychosocial model (BPSA) in public health, especially again in the elderly [8, 9]. Results underline that resilience to physical disorders such as a virus infection will always be influenced by psychological and social factors, especially by social support [11-13] and must therefore be considered in a holistic approach to public health especially for the elderly. Psychoneuroimmunology (PNI) has been developed over the last decades as an important field in this context, and recent publications have demonstrated, that for example lifestyle-based interventions on the psychosocial level can have a positive impact on physical resilience [14]. Negative social support, such as discrimination, in contrast has been documented to lead to increased physical health risks through epigenetic mechanisms [15] in the expression of genes, and a recent review has underlined the role of psychological depression in the immune system parameters of elderly patients [16].

This recent developments, do, as noted before, underline the importance of an interdisciplinary approach including social networking interventions even in time of public health crisis and pandemic, as all social factors could also influence resilience. Measures strengthening resilience are especially important in a situation when medical systems are overwhelmed, and we at present in the case of Corona have no efficient treatment or medical prevention (vaccination) tools. Online interaction through social media [17] such as WhatsApp, Facebook® and Communications Systems such as Skype have been used increasingly to counter the social isolation strategies implemented by governments in many countries, and also replace physical traveling. Still, most elderly persons are hesitant and /or do not have the skills to use such technological means, that usually also require skills in regards to computing and smart phone use.

In the following part of this article we want to present a small first pilot project using a low barrier, low-cost approach to improve the access to social interaction and contact with family members and friends for elderly patients with limited acceptance of and experience with technological communication tools. The project was implemented by a working group of Amnesty Medical Group Austria focusing on the impact of the restriction of human rights on different groups of vulnerable persons, such as refugees and elderly members of the population.

## Methodology

To explore the barriers to the use of online tools for direct (audiovisual) interaction we provided in a very first small pilot five persons of different age groups (30-85) with access to different online communication tools. While receiving the call and communicating with an opposite party both visually and acoustically was not accompanied by any problems in the age group under 80, the participants with advanced age (80, 85) where observed to be challenged and consequently hesitant to start their (simple, standard office) PC and enter the meeting when called.

We therefore tested the range of available audiovisual technological communication platforms for online use, including well-established standard tools such as Skype®, Zoom®, MS®teams, and WebEx® and in a further step the new audio input directed platform provided by the Internet services by Amazon® (Amazon Echo® with Alexa®, in the version Amazon Echo Show with a 10 inch screen). This system can be activated by voice after full installation, but also make use of a passive approach that initiates the call by the younger partner with passive log in and participation of the elderly client, without any necessary steps from the side of the person called (drop in) after a principal permission was given. In our pilot test, this was well accepted by the participants with advanced age, that had earlier refused to use systems that require active steps to participate in a meeting on a computer or smart user interface. We used the very simple pilot design as a feasibility test including a qualitative interview and participant observation as a first step to prepare later testing in larger groups and see this limited design as justified by the urgent need to explore options to address the increasingly severe isolation of elderly population members during the present social contact restrictions. We will separately report on larger sample tests.

## Results

In the very simple pilot system we tested, observed typical obstacles in the use of Internet-based communication technology could be successfully resolved, in both user groups, family members on one side, and the elderly relative on the other, and also in the younger participant groups. Especially the elderly participants commented that they greatly enjoyed being actively addressed and contacted by their family members and reported no doubts that they would use the system increasingly in future. No technical problems were observed during this pilot test.

## Discussion and limitations

Simplified online interaction tools might be an important means to prevent the complete isolation of elderly groups during the social distancing strategies implemented in many countries that create a heavy load on the elderly in the social systems. The system tested by us is commercially available and easily accessible, low-cost, and easy to install by family members or helpers with basic technical skills. In our first pilot it appeared to be stable and flexible. Sound and visual quality were excellent, which is important to increase acceptance of the system in our experience. Still, in our first test, we could not provide data for a larger group or sample, but only could demonstrate the principle feasibility of our system, that will require further regional research, also in regards to alternative technological and non-technological means. Data protection has also been mentioned in regard to most, including our online tools and needs consideration especially as the system might intrude on privacy and requires an opt out (such as covering the camera) to protect it. It is also obvious that online interaction, even of very good technical quality, can never replace physical interaction, but in the present situation it must be seen as a viable emergency

intervention to prevent a feeling of loneliness and isolation in a critical pandemic isolation situation.

### Declaration of conflicting interests

The system was obtained by the working group without any financial support by Amazon® or other commercial companies. It consists of one dedicated Android Alexa® Ready tablet (10 inch) and one Amazon Show® 10 audiovisual unit (based on Amazon OS Android variation) with consent of all participating persons.

### Conclusions

Internet-based communication structures, such as the one tested by our group, cannot replace social interaction on a physical level, but should be explored as a means to address the so far widely neglected challenge of elderly persons as a special risk group of virus infection due to their lethality and lower resilience. It should be explored also, if social isolation in the elderly, especially during this unusual extreme situation, in addition to already frequently existing isolation problems, has a short or long-term impact on physical and psychological health and resilience in general. This might be modified by cultural background, which would be a further issue the explored by future interdisciplinary research.

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