**D.E.M.O**. Project  $\overline{\succ}$ 

# Telemedicine and digital health solutions among people experiencing homelessness

**Digital Health Solutions in Medicine** 

SURVEYS ON TELEMEDICINE ATTITUDES, ACCESS TO DIGITAL DEVICES, AND THE FEASIBILITY OF INTRODUCING A TELEMEDICINE SERVICE

Flash Report by the Semmelweis University Digital Health Research Group and the Research Unit of the Hungarian Charity Service of the Order of Malta



# A Survey of Telemedicine Related Attitudes of People Experiencing Homelessness

# SURVEY RESULTS 2022

# INTRODUCTION

In recent years, digital tools have been utilized more and more widely in healthcare, and this was only intensified by the coronavirus epidemic. The Semmelweis University Digital Health Solutions in Medicine research group and the Hungarian Charity Service of the Order of Malta have been working together for several years trying to assess how healthcare and access to services of vulnerable groups and socio-economically disadvantaged communities such as people experiencing homelessness could benefit from digital technologies like telemedicine or smartphone-based platforms. In other words, how can technology level out health-related inequalities.

Three research projects were conducted successfully so far which we are presenting in this flash report.

- 1) Attitudes towards telemedicine among people experiencing homelessness
- 2) Telemedicine pilot project in care settings for people experiencing homelessness
- Access to digital devices and health-related internet use among people experiencing homelessness

The most important research results are the following:

- • The homeless population is open to telemedicine use to the same extent as is the domestic reference group.
- • The degree of openness to the use of telemedicine is primarily a question of trust in the traditional health care system.
- • Homeless clients and doctors participating in the telemedicine pilot project reported high level of satisfaction. The evaluation remained high even in the follow-up phase.
- • One of the cornerstones of the telemedicine service are the assistants who can effectively aid the doctor's work and the patient's orientation in the system.
- • Compared to the control group, the use of digital tools and health-related internet use among people experiencing homelessness is lower, but stable, well measurable.
- • A digitally active group can be observed among people experiencing homelessness. Targeted digital solutions can be designed for them with further targeted research.

The research was carried out within the framework of the basic research program OTKA -FK 134372

# 1) TELEMEDICINE RELATED ATTITUDES AMONG PEOPLE EXPERIENCING HOMELESSNESS

#### **METHODOLOGY:**

Between April 14-21, 2020, the research group, with the help of the Hungarian Charity Service of the Order of Malta, used a self-developed questionnaire in 4 Budapest homeless shelters involving 98 people to assess their attitudes related to digital health technology, especially telemedicine. As a control group, 110 patients from two, medium sized Budapest general practices were used. The results of the research were published by the members of the research group in PLOS ONE: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0261145

#### **RESULTS:**

- Basic demographic data
- · Attitudes towards telemedicine among people experiencing homeless

## BASIC DEMOGRAPHIC DATA

# Gender?

			90,8%				9,2%
	55	5,5%			44,5%		
			92%				8%
			Man			v	Vomar
ye?							
<mark>2,</mark> 04% 2	23,47%			74,49%			
4,46%	24,11%			71,43%			
8-44 vears	45-59 years		c	over 60 years			
o you consi	ider yourself to	be homeless	;				
34,7%				65,3%			
Yes				No			
w long ha	ve vou been h	amalass2					
w tong nu	ve you been no	Jinetess?			1		
	41,0%	Jineless?	16,4%	16,4%		26,2%	
	41,0% 0-5 years	Jineless?	16,4% 6-10 years	16,4% 11-15 years	1	26,2% 16+ years	
ghest educ	41,0% 0-5 years	ment?	16,4% 6-10 years	16,4% 11-15 years	1	26,2% 16+ years	
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ghest educ 3,1% 3,1% 5,5% 3,5% 17,0 years of 8 ye nentary eler pool. scho pow often do	41,0% O-5 years cational attain 25,77% 22,7% 22,7% 0% ears of mentary ool. 0 you go to a constant 6	ment?	16,4%   6-10 years   49,48%   26,4%   61,6%   trade school   any healthcare   91,6%	16,4% 11-15 years service?	42,7%	26,2% 16+ years 15,46% 6 12,5% high school leaving exat 2,6%	6,19% 5,4% Univers n or colle
ghest educ 3,1% 3,1% 5,5% 3,5% 17,0 years of 8 ye nentary eler bol. scho bw often do	41,0% O-5 years cational attain 25,77% 22,7% 0% ears of mentary iool. 0 you go to a co 6	ment?	16,4%   6-10 years   49,48%   26,4%   61,6%   trade school   any healthcare   91,6%   88.9%	16,4% 11-15 years service?	42,7%	26,2% IG+ years 15,46% 6 12,5% high school leaving examples 2,6%	6,19%

#### THE MOST IMPORTANT RESULTS:

A comparison of the control group and the sample revealed that the homeless population is not more dismissive of telemedicine than the general population. Openness to online visits can primarily be based on trust in the healthcare system. Members of the homeless population who feel that they receive adequate care and attention are more likely to believe that telemedicine will be suitable for them as a form of care. The global digital health strategy of the WHO for 2020-2025 considers trust to be extremely important, and this was also confirmed by our research. However, while in other countries trust in technology, data protection, and security is what is important in general populations, projected for the homeless persons in our research trust in the general healthcare institutional system is what is important.

# 2) TELEMEDICINE PILOT PROJECT

#### **METHODOLOGY:**

Based on the results of an attitude survey among homeless people in the first half of 2021, the telemedicine pilot project was designed and carried out by the Digital Health Research Group and the Hungarian Charity Service of the Order of Malta consisting of 6 online visits in 4 temporary accommodations for homeless people, over a period of 12 weeks. Out of the 75 participants, 55 patients completed the entire series of 6 sessions of televisits and a total of 415 online visits took place. The research group and the professional participants (physicians, assistants) conducted focus group interviews before and after the start of the project. In 4-6 months, the participating patients will undergo a follow-up where they are asked in a questionnaire about how satisfied they were with the service in retrospect, and if telemedicine were to become a regular form of care, how likely they would use it regularly.

#### **RESULTS:**

- Telemedicine pilot flowchart
- Demographic data
- Technical implementation and supply characteristics
- Reviews of patients and doctors







#### TECHNICAL IMPLEMENTATION AND CARE CHARACTERISTICS



#### THE MOST IMPORTANT RESULTS OF THE PILOT PROJECT:

The telemedicine pilot project in Hungary was the first attempt to test the feasibility of telemedicine in the service of people experiencing homelessness. The most important result is that the research team carried out the 12-week-series of 6 visits with minimal patient dropout. Satisfaction among doctors and patients was high. The follow-up revealed that homeless clients would be open to such healthcare services on a regular basis.

As a milestone in our research, it turned out that the healthcare assistant is the key to the telemedicine service process who can work locally at the shelter, to provide assistance to the client, and at the same time help the physician during the online visit.

If the assistant tasks related to televisits could be deepened in the framework of a professional training for health or social care workers, the form of service could be applied for a wider range of populations experiencing homelessness, or for other disadvantaged groups.

# 3) ACCESS TO DIGITAL TOOLS AND HEALTH-RELATED INTERNET USE AMONG PEOPLE EXPERIENCING HOMELESSNESS

#### **METHODOLOGY:**

Between April and August 2021, with the help of the Hungarian Charity Service of the Order of Malta, the research group administered a self-developed questionnaire to 662 homeless persons in 28 institutions in Budapest catering for the needs of homeless people.

The topics included access to digital technology, health-related internet use and digital skills. For some questions, a reference group was available for the sample from the Digital Health Working Group's previous research, a representative Hungarian population survey on digital health-related knowledge and attitudes with 1500 respondents which was published in December 2021.

#### **RESULTS:**

- Demographics
- Access to digital tools
- Barriers and enabling factors for access to digital tools
- Criteria and characteristics for selecting a digitally active homeless group

# BASIC DEMOGRAPHIC DATA

Gender?						
28,8%			71,2%			
Woman			Man			
Age?						
25,9%		35,3%		38,8%		
18-44 years		45-59 years		over 60 yea	ars	
Do you consider yourself	to be homele	ss?				
	70,7%			25,8%	6	3,5%
	Yes			No		N/A
How long have you been	homeless?					
32,4%		24,7%		42,9%		
0-5 years	:	5-10 years		10+ years		
What is your highest edu	cational attai	nment?				
38.83%		53,7	5%	20,8	0%	4,62%
8 years of elementar	y school	trade s	chool	high so	chool	University
				leaving	exam	or college
What kind of homeless c	are institution	can it be classif	ied as?			
12,7% 25	,2%	21,9%		26,9%	6%	7,3%
Str. Outreach Day S Service	Shelter	Night Shelter	Ter	nporary helter	TSH*	FS**
				*TSH: Temporary on health i	shelter wi mproveme	th a focus ent
How often do you go to c	doctor or use	e any healthcare	service?	**FS: Family she	lter	
		10.000/		40.000/		
more than once	22,05%	18,38%		42,88%		
a month every	1-2 months	every half year	year	ly or less frequ	iently	
Do you have a chronic ill which requires medical a	ness or any m ttention?	edical condition	lasting at lea	ast 6 months		
47,29	6	10,4%		42,4%		
No		I don't kno	w	Yes		

#### ACCES TO DIGITAL TOOLS

#### Have you used the internet in the past 6 months?









#### BARRIERS OF ACCESSING DIGITAL TOOLS

#### What barriers, if any, are restricting your Internet use? (Answers in percentages)



### STEPS IN IDENTIFYING THE DIGITALLY ACTIVE HOMELESS GROUP

Number of respondents: 662

51,2%	Percentage of respondents who use the Internet every two weeks or more frequently
36,4%	Percentage of respondents who have a data contract or a pay as you go facility or access free WIFI and use their own smartphone or computer for the Internet
31,4%	Percentage of respondents who consider themselves average or more competent Internet users
19,5%	Percentage of respondents who have ever used the Internet for health-related purposes
5,9%	The proportion of respondents who have ever used health-related mobile applications

## THE MOST IMPORTANT RESEARCH RESULTS:

A comparison of the sample and the reference group revealed that among people experiencing homelessness, the use of digital devices is significant: they have mobile phones, including smartphones. They use the Internet and a third of them use it for health-related purposes. Moreover, we were also able to detect a digitally active homeless group based on smartphone use and health-related Internet and mobile app use. We wish to investigate this group more thoroughly in further research. All this leads to the important result that the homeless population can be included in the digital health care system. Moreover, within the framework of specially designed, holistic programs, smartphones can serve as a link between the homeless population and the health care system.