



E-Physicians in Hungary

Digital Health Solutions in Medicine

PHYSICIAN SURVEY 2021-22

Preliminary brief report of the survey on the digital health related attitudes, knowledge and needs of Hungarian physicians.

TABLE OF CONTENT

» **Introduction** 2

» **Methodology** 3

Figure 1: Demographic data

» **Internet and digital device use** 5

Figure 2: Do you make digital recommendations to your patients?

Figure 3: What do you think about your patients' health related internet use?

» **Present and future technologies** 7

Figure 4: Digital technologies in the present and in the future

» **Needs, opportunities, disadvantages** 9

Figure 5: Have you experienced demand from patients?

Figure 6: What would it take to have you use digital health solutions in your practice?

Figure 7: What advantages can digital health solutions have?

Figure 8: What are the disadvantages of digital health solutions?

» **Type of workplace, age, existence of private practice, as factors influencing digital technology use** 12

E-Physicians in Hungary

- PHYSICIAN SURVEY 2021-22 -

A SURVEY ON THE DIGITAL HEALTH RELATED ATTITUDES, KNOWLEDGE AND NEEDS OF HUNGARIAN PHYSICIANS.

INTRODUCTION

The key players in the digitalization of healthcare are the workers on the provider side. Even before the COVID-19 pandemic, international analysis was focusing on healthcare workers and the successful digitalization processes. These analyses assume that by 2040, 80-90% of healthcare will have been digitized. To be prepared for the changes, it is important to be aware of the current situation, the present digital activities and possibilities of providers, and the conditions necessary for these transformations. Our research wants to facilitate this. Our goal was to assess the digital health related usage, habits, knowledge, attitudes and expectations of Hungarian physicians.

The most important findings of our research are the following:

Overall, it can be concluded that the responding doctors show great openness towards and interest in digital healthcare solutions.

- Almost 80% of the responding doctors recommend websites more or less regularly, and almost half of them have already recommended applications and social media sources to their patients.
- 80% of the interviewed doctors experience a high demand from patients for e-mail communication.
- 80% of the respondents have already used telemedicine solutions, and half of the respondents want to use them intensively in the next 3 years.
- In the next 3 years, half of the respondents would like to use applications, sensors, portable diagnostic devices and the possibilities provided by Artificial Intelligence.
- It can be said that websites, applications, and social media sources are recommended by general practitioners, and they are the ones who monitor health related internet use of their patients. They are also the ones who most support telemedicine.
- At the same time, more people working at universities and clinics are already using and would like to continue using devices, AR and VR, 3D printing, AI and robotics in the next 3 years.

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

METHODOLOGY

The E-Physicians in Hungary research was carried out by the Digital Health Working Group of the Institute of behavioural Sciences of Semmelweis University under the leadership of Dr. Zsuzsa Györfy and Dr. Edmond Girasek.

The questionnaire used in the survey was developed by our research team. An important aspect was to make it comparable with the one used in our population study. It was available online between July 2021 and May, 2022. The Hungarian Medical Chamber helped us reach its members through their newsletter and through email. The survey was made significantly more difficult by the 3rd and 4th waves of the COVID epidemic, which affected all medical doctors working in patient care.

The number of questionnaires received is 1,774, of which 1,576 were from medical doctors and 198 from dentists. For methodological considerations, we analysed data from the medical doctors and dentists separately, and in the following we only present the data for medical doctors. Correctional weighing was made on the answers received based on registry statistics given by the Human Resources Development Directorate of the National Healthcare Service Centre.



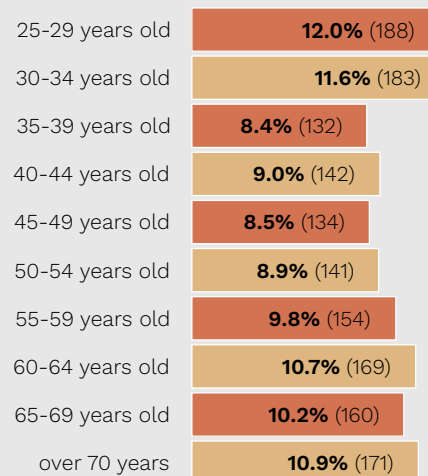
DEMOGRAPHIC DATA

Number of participants: **1576**

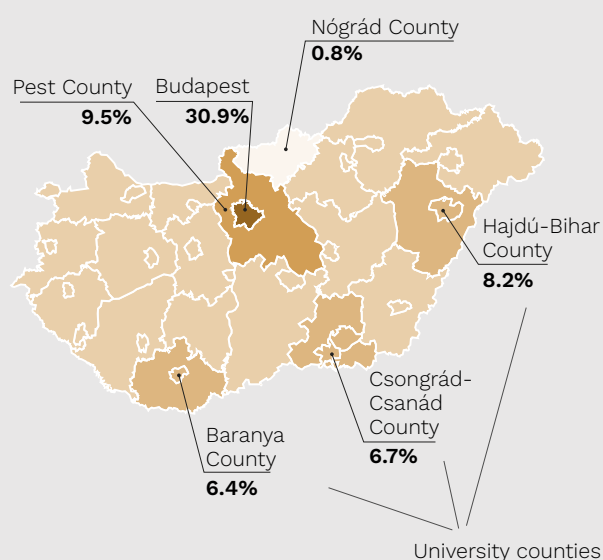
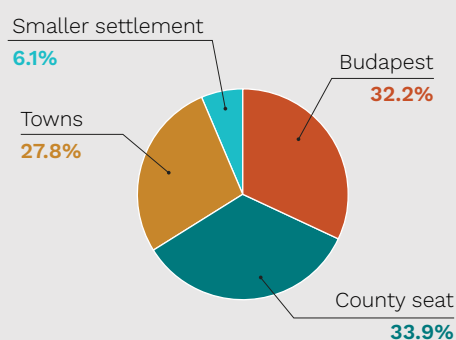
Gender Distribution



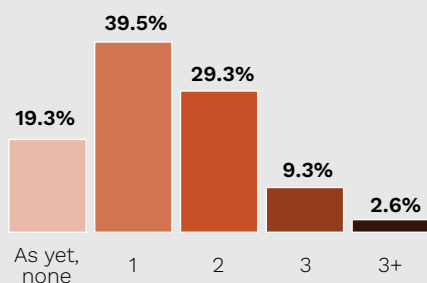
Age distribution



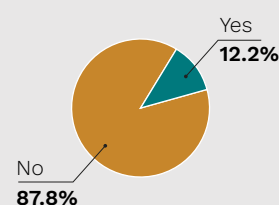
Distribution based on location of workplace



Number of board examinations



Have you worked abroad after receiving your degree?

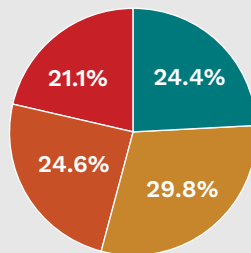


INTERNET AND DIGITAL DEVICE USE

Over 90% of respondents use the internet on a daily base.

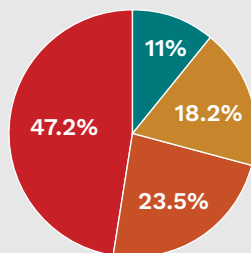
DO YOU MAKE DIGITAL RECOMMENDATIONS FOR YOUR PATIENTS?

Do you recommend **websites** for your patients?



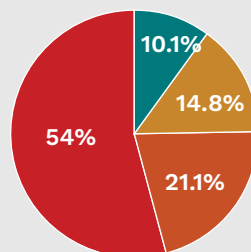
More than 80% of the respondents recommend websites to their patients more or less regularly.

Do you recommend **apps** for your patients?



More than half of the respondents has already recommended apps for their patients.

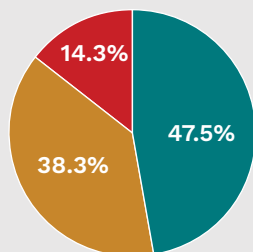
Do you recommend **social media sites** or **online patient groups** for your patients?



More than half of the respondents have already recommended social media sites and online patient groups for their patients.

- Often or very often
- Rarely
- Very rarely
- Never

WHAT IS YOUR OPINION ABOUT THE HEALTH RELATED INTERNET USE OF YOUR PATIENTS?



Almost 50% of the respondents are very supportive of their patients searching for health related information on the internet.

- supportive or 100% supportive
- somewhat supportive
- against it

PRESENT AND FUTURE TECHNOLOGIES

Most of the responding doctors (97.6% and 90.2%) are familiar with online conferences and online literature searches. Most of them currently use these digital opportunities and would like to keep on using it.

86.4% are familiar with telemedicine solutions and teleconsultations, 25.8% use them every day, 16.8% often, 20% moderately often and 19.3% rarely. A total of 18% answered that they do not use these solutions at all. Familiarity with social media is also high (75.9%), but only a third of the respondents would like to use it often or very often in the next 3 years, for example with patients in contact.

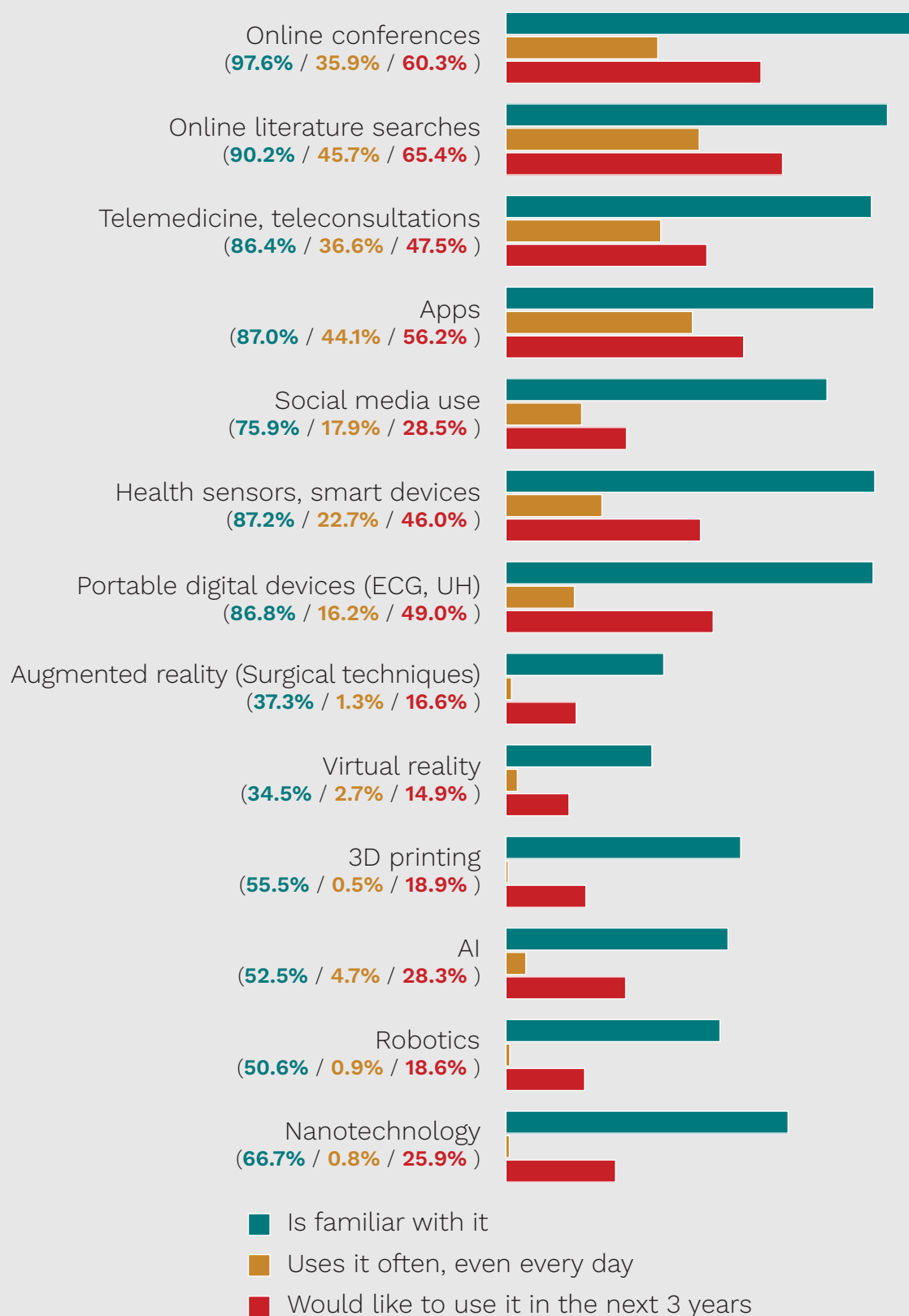
87% know about applications, sensors, smart devices and portable diagnostic devices. About half of the respondents would like to use these solutions in the next 3 years to keep in touch with patients for example.

Awareness of augmented and virtual reality is about 34-37% and 15-17% plan to use these technologies intensively in the near future.

3D printing is currently used the least among the respondents, but at the same time about a fifth of the respondents show interest in this technique.

Almost a quarter of respondents would like to use artificial intelligence and nanotechnology regularly, while nearly a fifth of respondents would like to use robotics more intensively.

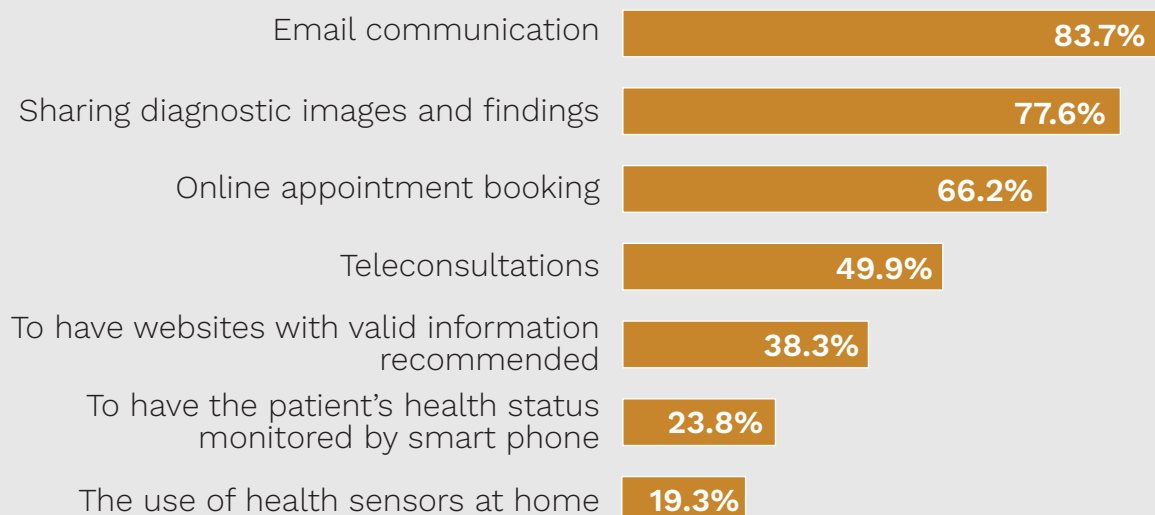
DIGITAL TECHNOLOGIES IN THE PRESENT AND IN THE FUTURE



NEEDS, POSSIBILITIES, ADVANTAGES, DISADVANTAGES

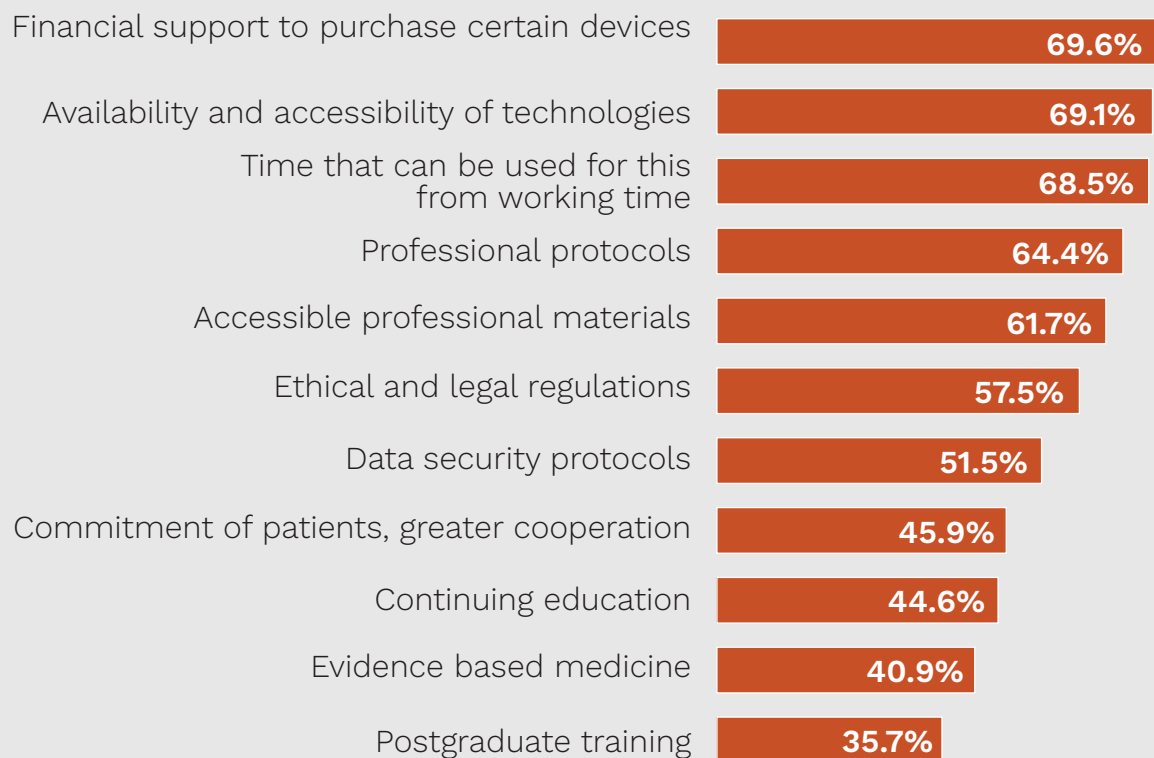
HAVE YOU EXPERIENCED A DEMAND FROM PATIENTS FOR THE FOLLOWING?

Multiple answers could be marked



WHAT WOULD IT TAKE TO HAVE YOU USE DIGITAL HEALTH SOLUTIONS IN THE PRACTICE?

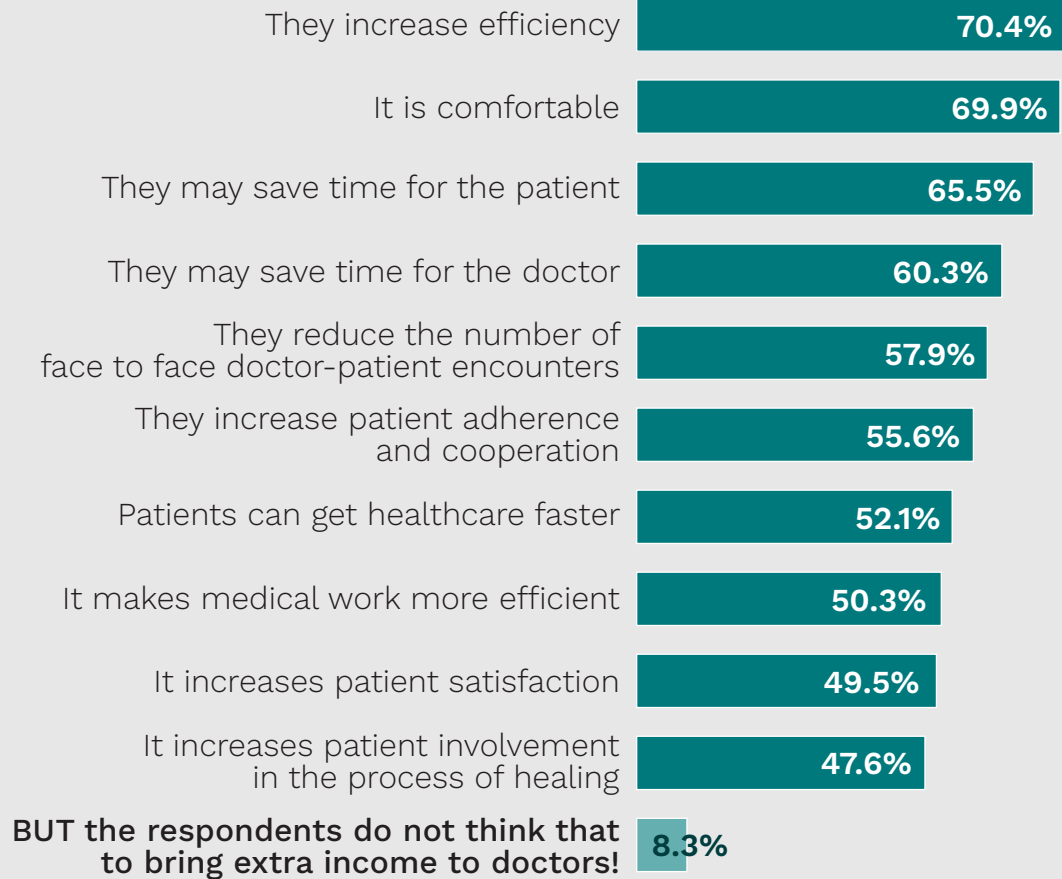
Multiple answers could be marked



WHAT ARE THE ADVANTAGES OF DIGITAL HEALTH SOLUTIONS?



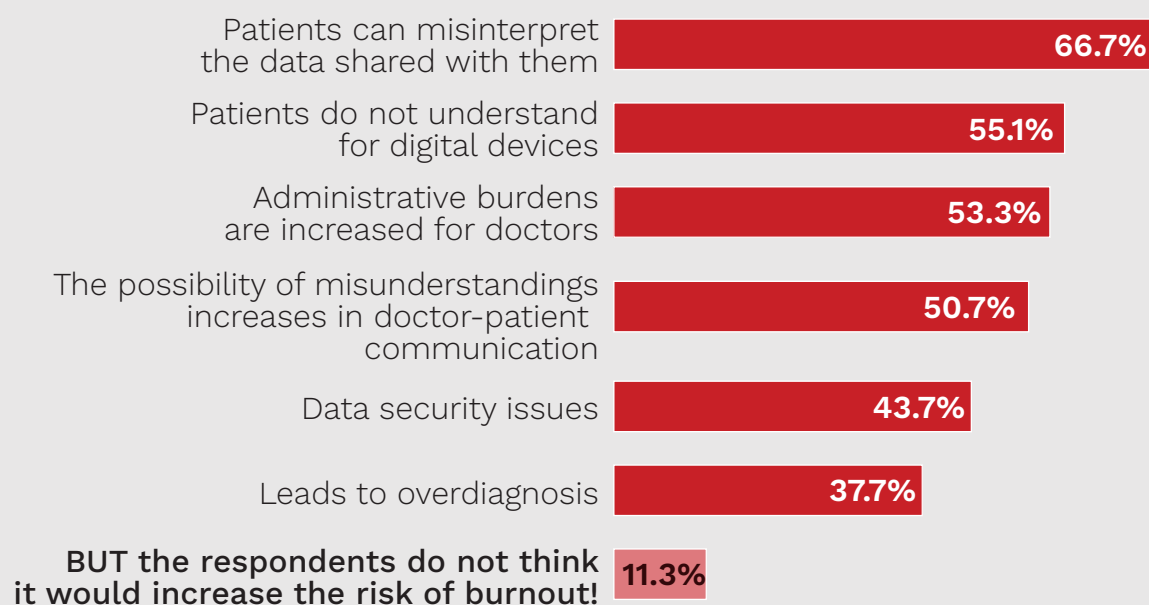
Multiple answers may be marked.



WHAT ARE THE POSSIBLE DISADVANTAGES OF DIGITAL HEALTH SOLUTIONS?



Multiple answers may be marked.



Feelings in medical circles are basically positive towards the digitization of healthcare and can be described as a cautious professional openness. Almost 2/3 of them approve of their patients' digital device used for disease monitoring and education. It is also nearly 70% who say that it would be important or very important to incorporate digital healthcare in the curriculum of medical education.

TYPE OF WORPLACE , AGE, EXISTENCE OF PRIVATE PRACTICE, LIKE DIGITAL AS DETERMINING FACTORS IN THE USE OF TECHNOLOGIES

It can be said that recommendations of websites, apps, social media source is significantly higher among general practitioners, and they are the ones who support patients' use of the Internet for medical purposes as well as the use of telemedicine. At the same time physicians working at universities and clinics are already using and would like to try sensors, portable diagnostic devices, AR and VR, 3D printing, AI and robotics in the next 3 years.



As for age, it can be said that the youngest age group is the most enthusiastic about the medical application of digital of technologies, at the same time, the age group between 35-45 is the most intensive user. Similar to the population survey, the age of 60 seems to be the watershed for both actual and planned digital technology use. We also examined differences between workers in the public and private sectors. Although those working in the private sector are more prone to recommend a website, application, or social media source and use telemedicine more often, in the case of other digital options (e.g. sensors, portable diagnostic devices, AR, VR, robotics, AI and 3D printing) we found no difference.