MUNI Interdisciplinary Research Team on Internet and Society

SYRI SYSTEMIC RISK INSTITUTE

Artificial intelligence and health:
How do Czech adults use AI?

Research report

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2024

CONTENT

Please cite as:
Blahosova, J., Tercova, N., Svestkova, A., & Smahel, D. (2024). *Artificial intelligence and health: How do Czech adults use AI?* [Research report] Brno: Masaryk University.

Acknowledgement:
We would like to thank all of the research participants for their participation, their willingness to cooperate with us, and for providing data.

Funding:
This output was supported by the NPO „Systemic Risk Institute" number LX22NPO5101, funded by European Union - Next Generation EU (Ministry of Education, Youth and Sports, NPO: EXCELES).

About the project:
www.syri.institute/about-us

Pictures:
The image on the cover page was created using ChatGPT. All other illustrations are from Freepik.

KEY FINDINGS

1) Nearly a third of a sample of Czech adults (28%) have used an AI system, such as ChatGPT or Bard, in the past year. Younger respondents, men, and people with a university or higher vocational education, used AI slightly more than other groups.

2) About one-third to one-half of those who have used AI in the past year were willing to use it to search for health information. Most people would search for information about healthy eating (48%) and the least would search for information about disease diagnosis (32%). People who have not tried AI are less likely to use AI to search for health information.

3) The level of trust in AI systems is still relatively low: only 15-16% of those who have used AI would trust the recommendations that AI provides. However, most people were neutral.

4) Conversely, more than half of the people who have not yet used AI said they do not trust the recommendations that AI would provide. Distrust of AI health recommendations also increased slightly with age.

5) Just because a respondent is willing to use AI to search for health information does not mean they trust that information. For example, only 22% of those who „rather agreed" that they would use AI to search for information about a disease diagnosis, trusted the AI recommendations (68% had a neutral attitude).

6) Only the future development of artificial intelligence will show the extent to which it will be possible to provide users with valid and verifiable information. The potential for the use of AI is probably high, but, so far, users are not convinced of the credibility of the information provided by AI.

INTRODUCTION

Technological innovations are having a profound impact on everyday life and they are changing the way we get information. This is also true in the area of health information, specifically how we seek health information. In this context, innovative artificial intelligence systems are emerging. Artificial Intelligence (AI) simulates human abilities, including reasoning, learning, planning, and creativity (European Parliament, 2020). These technologies enable technical systems to solve problems and achieve goals. AI systems can process and analyse data from a variety of sources, including sensors and cameras, and react.

Special attention is paid to the connection between artificial intelligence and health. This combination brings change in healthcare, including diagnostic support, treatment optimization, and personalized health management. AI finds applications in the form of chatbots with which humans can talk about their health, but also in eHealth resources and mHealth applications. MHealth apps (i.e., applications for computers or mobile devices designed to support and improve the delivery of healthcare) offer a wide range of functions, from tracking health data (e.g., step count, sleep quality) to interactive communication with health experts (Güleç & Šmahel, 2022). The results of previous studies suggest that the involvement of AI in healthcare can help physicians with routine tasks and diagnostic decision-making, thereby improving efficiency and access to care (Chang et al., 2023).

More and more, healthcare companies are investing in the development of artificial intelligence, including for mobile apps and chatbots. However, previous studies suggested that not all patients are willing to use AI-enabled healthcare services (Lai et al., 2020), and trust in them may be low. AI systems may operate in a non-transparent manner, making it impossible for patients to understand the inner functioning of such applications and how treatments, solutions, and recommendations are generated, thus reducing patient trust (Whittlestone et al., 2019). It is because of this lack of transparency that people with chronic diseases may not trust AI apps and prefer to interact with a doctor (Esmaeilzadeh et al., 2021). However, in healthcare, patient engagement is considered an important factor in determining the quality of healthcare. Therefore, it is important to understand patients' attitudes and beliefs related to the use of eHealth, mHealth applications, and AI-based chatbots (Esmaeilzadeh, 2020).

This research report explores the relationship between AI and health, focusing on the perspective and experiences of Czech adults. It focuses both on the general use of AI and on the willingness to use AI to search for health information (i.e., disease diagnosis, treatment options, causes of the symptoms, proper exercise, weight maintenance, healthy eating). It also maps the level of trust in the health recommendations that AI can provide.

METHODS

This research was carried out as part of the SYRI project (National Institute for Research on Socioeconomic Impact of Diseases and Systemic Risks). The data for this research was collected by the research agency STEM/MARK using its online Czech National Panel. The data collection took place in October 2023 and involved a total of 4,775 internet users aged 18 to 95 (mean age was 45.4 years). For data collection, a quota sampling of respondents was chosen to ensure that the sample corresponds to the population of the Czech Republic by the gender and age of the respondent, household income, the size of municipality, and region. The sample equally represented men and women (49.5% of women in the sample).

Respondents answered questions about searching for health information online, the use of mHealth apps, health anxiety, and more. The questionnaire also included a section about artificial intelligence.

The initial instruction to introduce this section was:

„Artificial intelligence and machine learning are digital technologies that are able to mimic human abilities, such as reasoning, learning, planning, and creativity. Artificial intelligence can search and sort information and even answer complex questions."

Respondents answered the following question:

„In the past year, how often have you used an AI system to which you can ask questions and get automatic answers? These systems include ChatGPT, OpenAI, Bard, and so on."

This was followed by questions about the purposes for which respondents use AI, their willingness to use AI to search for health information, and their trust in the health-related information that AI provides. Our research report further explores these findings.

RESULTS

General use of AI in a sample of Czech adults

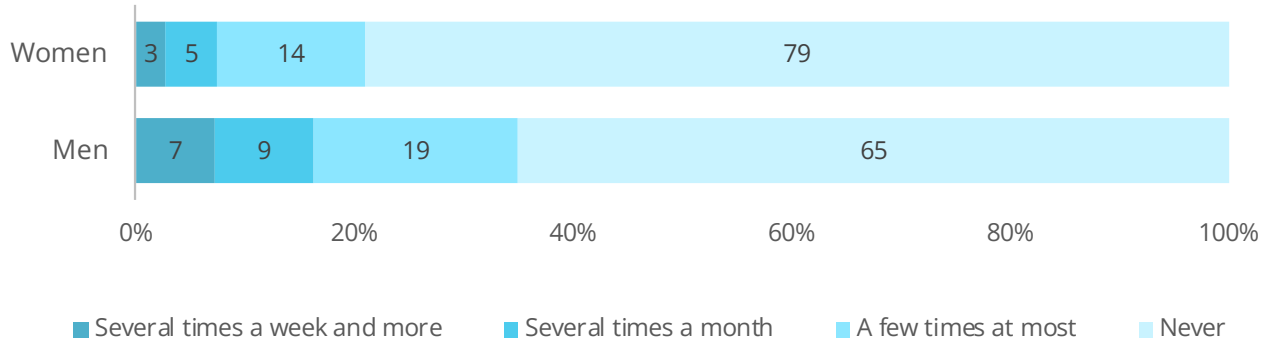
The findings of our research show that almost a third of respondents (28% in total) have used AI, such as ChatGPT or Bard, at least once in the past year. A total of 5% of all of the respondents have used AI several times a week or more in the past year. However, the majority of respondents have not used it at all (72%).

In **Figure 1** we can see the frequency of AI use in the last year for men and women. It shows that men used AI slightly more often than women. A total of 35% of all men said they had used AI in the past year, compared to 22% of women. However, the majority of both groups did not use AI at all (65% of men and 79% of women).

28%

of respondents have used AI, such as ChatGPT or Bard, at least once in the past year

Figure 1: Frequency of AI use by gender.



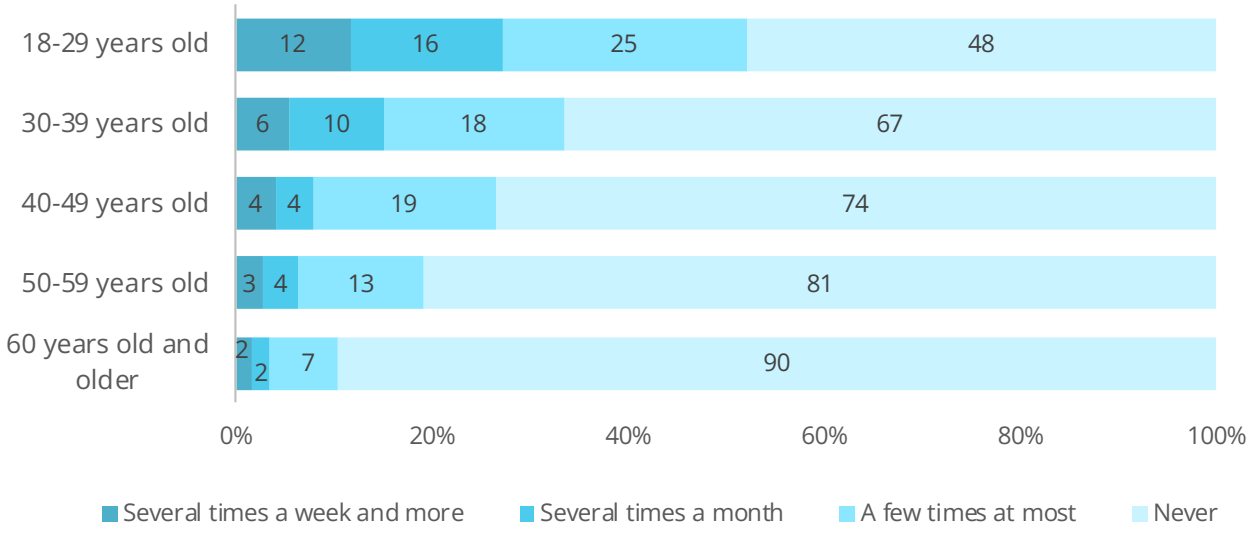
Note: In the past year, how often have you used an artificial intelligence system to which you can ask questions and get automatic answers? These systems include ChatGPT, OpenAI, Bard, and so on.
Percentage base: women (n = 2,340), men (n = 2,391)

In **Figure 2**, we can see that younger people used AI more than older people. Almost 40% of 18-29-year-olds used AI several times a month or more. The percentage of people who have never used AI increased with age. Among respondents aged 60 and older, this was 90% of the respondents. Only 2% of this age group have used AI a few times a week or more often, compared to 12% in the youngest age group.

90%

of respondents aged 60 and older have never used artificial intelligence

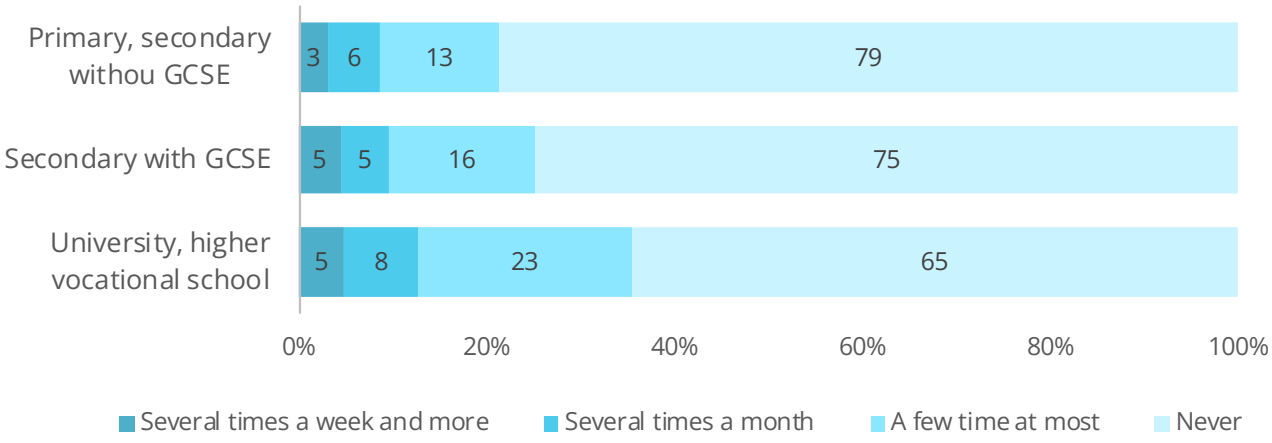
Figure 2: AI use by age group.



Note: In the past year, how often have you used an artificial intelligence system to which you can ask questions and get automatic answers? These systems include ChatGPT, OpenAI, Bard, and so on.
Percentage base: 18-29 years old (n = 867), 30-39 years old (n = 1,111), 40-49 years old (n = 866), 50-59 years old (n = 939), 60 years old and older (n = 952).

Figure 3 summarizes the frequency of general AI use by the education of respondents. To avoid including those still in college, we provide data only for respondents aged 30 to 59. The results show that people with a university or higher vocational education used AI more. A total of 36% of this group have used an AI system at some point in the last year, compared to 22% of the group with primary or secondary education without a high school diploma. However, the differences between the group without a high school diploma and the group with a high school diploma were relatively small.

Figure 3: Use of AI by education (respondents aged 30-59).



Note: In the past year, how often have you used an artificial intelligence system to which you can ask questions and get automatic answers? These systems include ChatGPT, OpenAI, Bard, and so on.
Percentage base: respondents aged 30-59, primary education, secondary education without GCSE (n = 945), secondary education with GCSE (n = 1156), university and higher vocational school (n = 815).

Purpose for using AI

Respondents who answered that they had used AI in the past year were also asked about the purpose for which they had done so. The results show that Czech adults used AI for a wide range of activities, such as searching for information about illnesses, creating diets and finding tips for healthy recipes, programming, proofreading, writing emails, work purposes, and for communicating or learning foreign languages. In many cases, respondents were trying to test the AI system to see what it could do or to catch it making a mistake. In this research, we did not measure the frequency of each activity, so it is not possible to say for what purposes AI is most used. Below are examples of open-ended responses in which respondents described the purpose of using AI in different areas.

Diseases and treatment options

"I was looking for ways to quit smoking and speed up the recovery of my lungs after several years of smoking."

Female, 30 years old

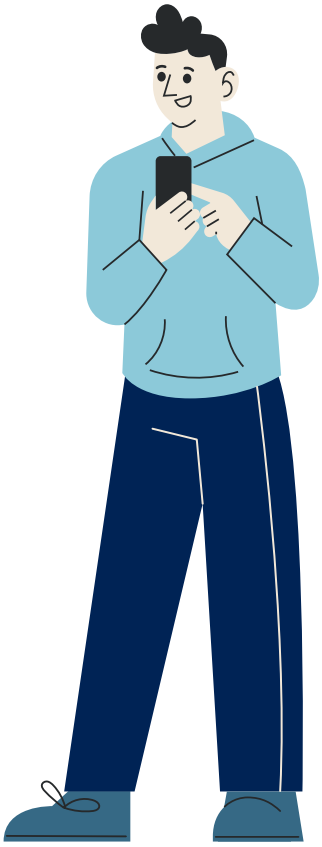
"I was trying to find out more information about lumbar spine pain and options for proper exercising."

Male, 59 years old

"Recently, I used AI to search for answers about meditation and mental health."

Male, 32 years old

Healthy lifestyle



"I use AI when I run out of inspiration on what to cook while dieting. It has put together meals for me according to the specified ingredients."

Male, 39 years old

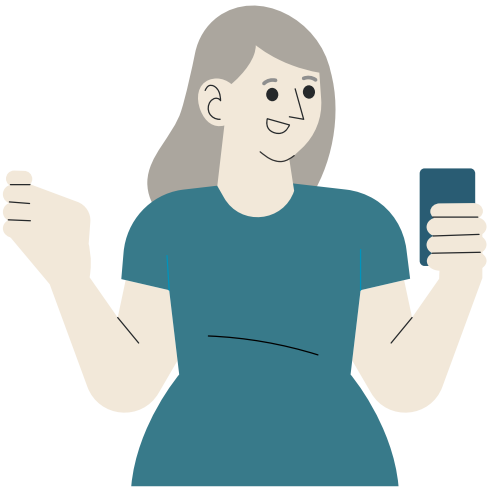
"I used AI to put together a diet and workout plan."

Male, 32 years old

"I used AI to find symptoms and information about diseases. I also used it to make a diet plan and make suggestions for exercises."

Male, 30 years old

Work assistance



"I use artificial intelligence to create exams in engineering for my students."

Female, 62 years old

"I use it to help with programming, generating texts for different occasions in different languages, or summarizing texts."

Female, 38 years old

"When I run out of creative ideas, I ask AI how it would approach it."

Female, 36 years old

Education and information seeking

"I've used AI to expand my knowledge in areas like technology and history."
Male, 76 years old

"I have used AI to check and formulate sentences in English, find sources and information for my thesis."
Female, 28 years old

"I used it to choose a new car."
Female, 32 years old

"I use ChatGPT mainly as a study aid. I don't use it for writing my thesis, but as a source of information I need to add to my learning for myself."
Male, 23 years old

"I mainly use it to simplify academic text."
Female, 22 years old

Entertainment and leisure

"I use AI for flirting advice."
Female, 18 years old

"I use it to generate images based on my dreams, also to help write my fantasy/sci-fi story."
Female, 20 years old

"Kids make up bedtime stories with the help of AI."
Male, 35 years old

"I used it to write my best man's speech for a wedding."
Female, 33 years old

"I use AI when I feel lonely."
Male, 27 years old

"To chat with a robot."
Male, 30 years old

Experimenting and testing AI knowledge

"I have used AI for fact-checking. In most cases, I got the AI to admit it was wrong."

Male, 57 years old

"I wanted to test the AI system. I asked questions in different areas, including examples where I knew the answer."

Female, 47 years old

"I tried asking a few questions about topics I understand and had fun trying to confuse it. Since the answers did not satisfy me, I do not consider the AI to be sufficiently developed to be trusted."

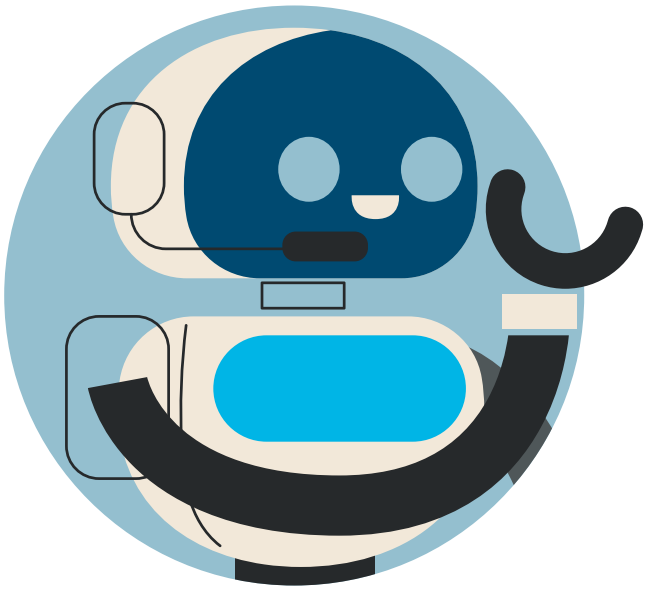
Female, 27 years old

"I used an AI system to answer ‚tricky' questions I asked to see if the AI was intelligent enough to give an informed answer like a human whose brain is far more powerful at creatively producing an answer."

Male, 45 years old

"I used AI only for fun and testing. But through testing, I'm finding that AI is nowhere near human-like."

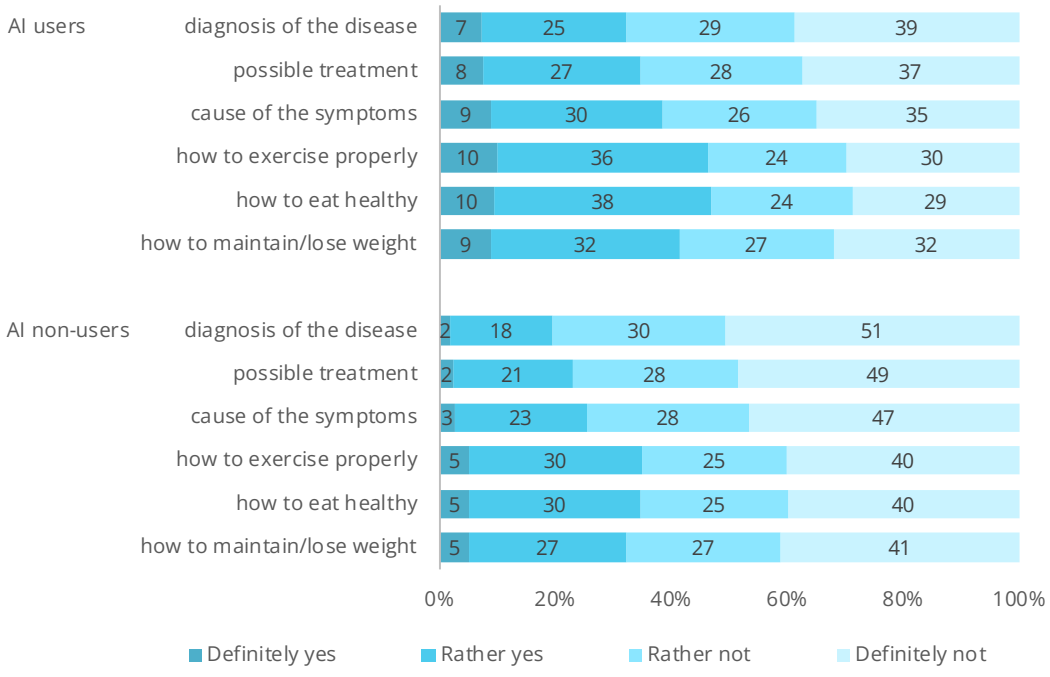
Male, 37 years old



Willingness to use AI to search for health information

One of the uses of artificial intelligence is health-related information seeking. **Figure 4** shows the willingness to use AI to search for health information. The chart shows how this willingness can vary for different types of information and how it is based on whether participants have had any previous experience with AI. For those who have used AI in the past year, we observed a higher willingness to use AI to search for different types of health-related information (willingness ranged from 32% for disease diagnosis to 48% for healthy eating). For respondents with no prior experience with AI, willingness to use AI for different types of health-related information ranged from 20% (for symptom diagnosis) to 35% (for proper exercise and healthy eating). In both groups (i.e., AI users and non-users), respondents were slightly more willing to search for healthy lifestyle information than for information related to diseases, symptoms, or treatments. For example, among those with previous AI experience, a total of 48% would be willing to seek information about healthy eating or 46% on proper exercise, but only 32% on disease diagnosis or 35% on treatment options.

Figure 4: Willingness to use an AI system to answer questions about health (by previous AI experience).



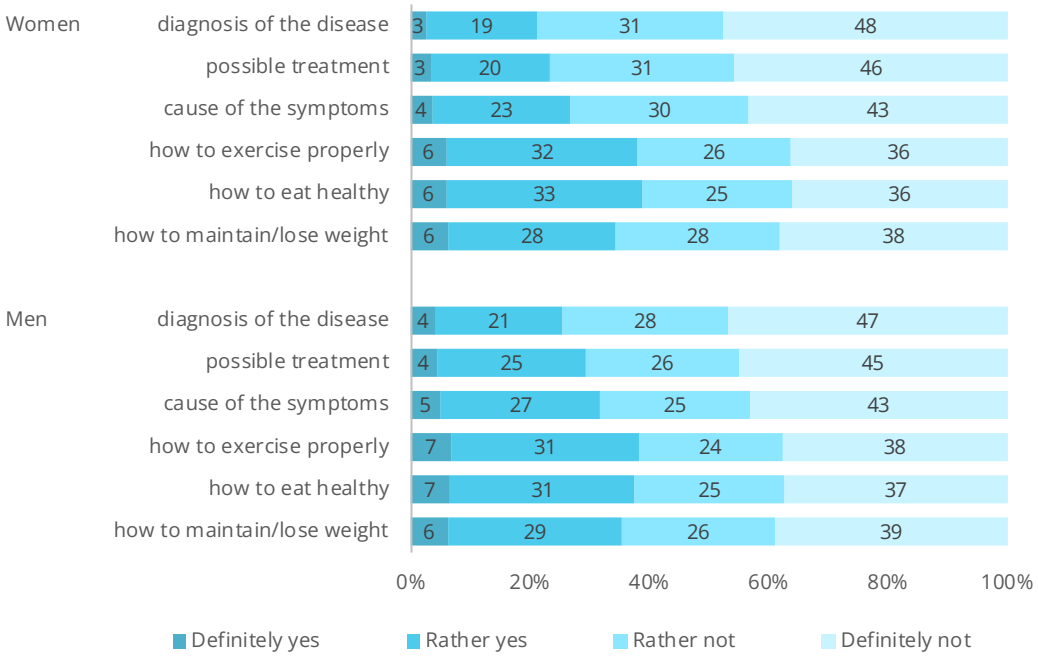
Note: Would you use such an artificial intelligence system to answer your questions related to: diagnosis of disease, possible treatment, cause of the symptoms, how to exercise properly, how to eat healthy, how to maintain/lose weight?
Percentage basis: AI users (n = 1,331), AI non-users (n = 3,404).

In case of willingness to use AI to search for health information based on the gender of our respondents (**Figure 5**), the differences between men and women were minimal. On average, 31% of women and 33% of men were willing to use AI to search for information about disease diagnosis, symptoms, and healthy lifestyle. Thus, the difference was small. Again, both men and women were slightly more likely to use AI to search for information on proper exercise, healthy eating, and weight loss/ maintenance than on diseases or symptoms.

31% of women & 33% of men

(on average) were willing to use AI to search for information about health

Figure 5: Willingness to use an AI system to answer questions about health (by gender).



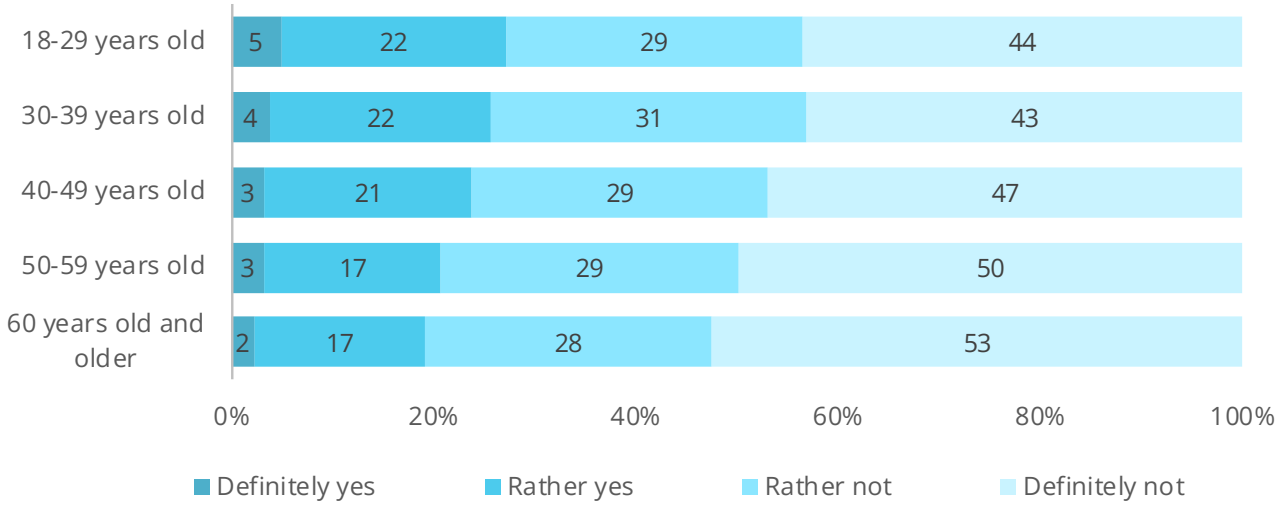
Note: Would you use such an artificial intelligence system to answer your questions related to: diagnosis of disease, possible treatment, cause of the symptoms, how to exercise properly, how to eat healthy, how to maintain/lose weight?
Percentage basis: men (n = 2,377), women (n = 2,314).

In examining how the willingness to search for health information using AI varies by age, we focused on the categories of disease diagnosis (**Figure 6**) and proper exercise (**Figure 7**). In the case of searching for information related to disease diagnosis, the younger group of respondents aged 18-29 would be more willing to use AI to search for information related to disease diagnosis (27% of them) than the older group of respondents. For respondents aged 50-59 and 60 and more, the percentage of people who would be willing to use AI for this purpose is slightly lower (around 20%).

27%

of respondents aged 18-29 would be more willing to use AI to search for information about disease diagnosis

Figure 6: Willingness to use an AI system to answer questions about disease diagnosis (by age).



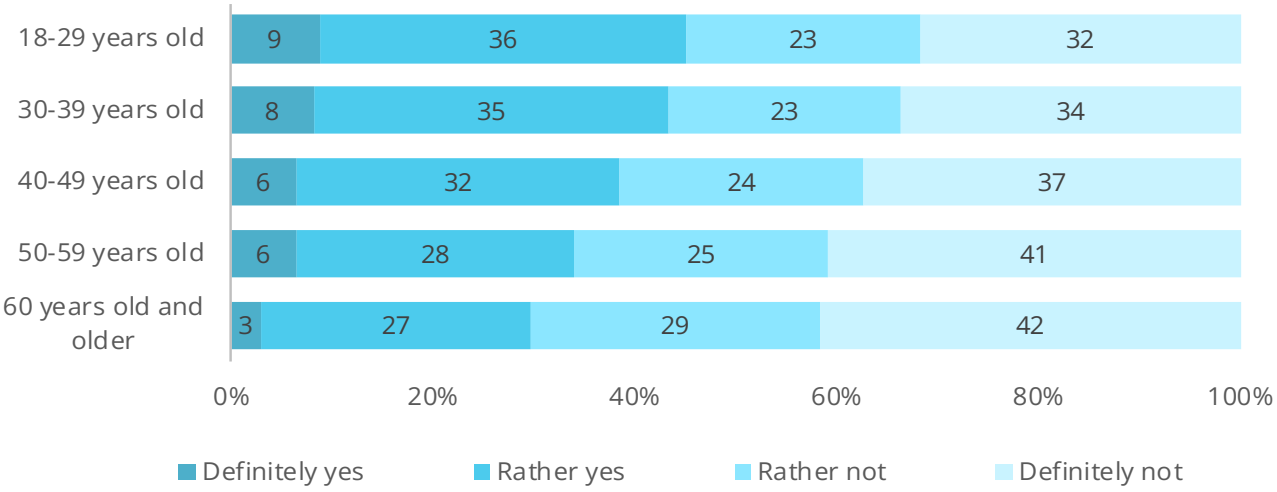
Note: Would you use such an artificial intelligence system to answer your questions related to diagnosis of disease?
Percentage base: 18-29 years old (n = 860), 30-39 years old (n = 1,101), 40-49 years old (n = 858), 50-59 years old (n = 926), 60 years old and older (n = 941).

The situation was similar in the willingness to use AI to search for information related to proper exercise. **Figure 7** shows that a total of 45% of respondents aged 18-29 would use AI for this purpose, compared to 30% of the older group aged 60 years and more. However, in both age groups, the willingness to use AI was higher than in the previous example (i.e., searching for information on disease diagnosis).

45%

of respondents aged 18-29 would use AI to search for information about proper exercise

Figure 7: Willingness to use an AI system to answer questions about proper exercise (by age).

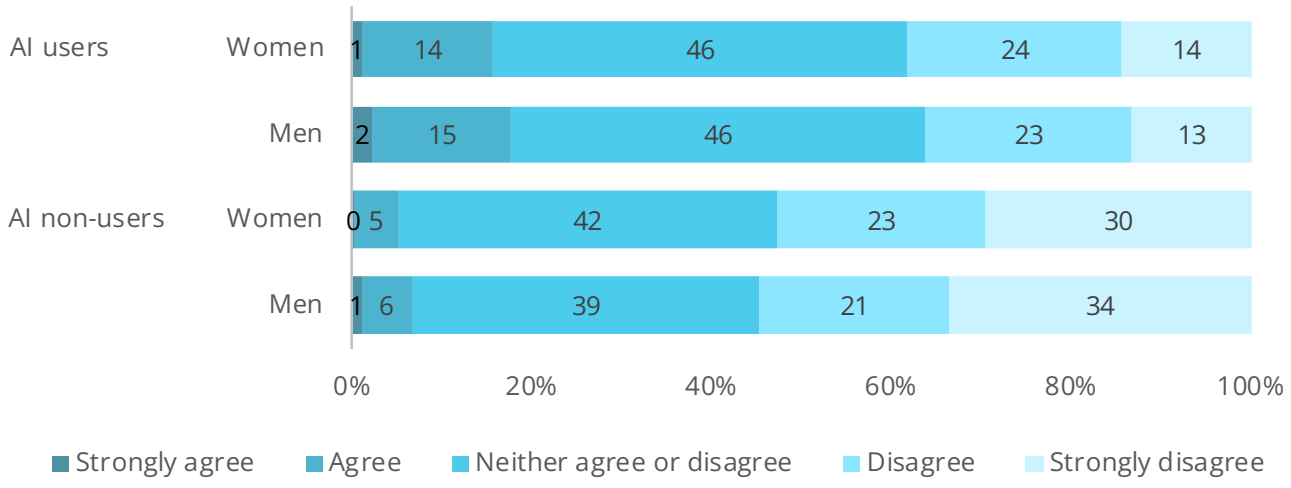


Note: Would you use such an artificial intelligence system to answer your questions related to how to exercise properly?
Percentage base: 18-29 years old (n = 862), 30-39 years old (n = 1,103), 40-49 years old (n = 863), 50-59 years old (n = 926), 60 years old and older (n = 940)

Trust in AI health recommendations

In addition to the willingness to use AI to find health information, it is important to look at how users perceive and trust the information provided by AI. **Figure 8** presents the differences in trust in AI health recommendations by prior experience with AI and by gender. In general, trust in this source of information is quite low and it does not differ much between women and men. For example, 15% of women and 17% of men with previous experience with AI said they agreed or strongly agreed that they trusted the recommendations provided by AI. For the group of respondents without prior experience with AI, 5% of women and 7% of men agreed that they trusted in AI recommendations. Most people were neutral regarding the issue of trust (between 39% and 46% for both groups, respectively). Additionally, 38% of women and 36% of men with previous AI experience disagreed or strongly disagreed that they trusted the AI health-related recommendations. Thus, it seems that prior experience with AI does not necessarily mean that one trusts AI recommendations about health.

Figure 8: Trust in AI health recommendations (by gender and prior experience of AI use).



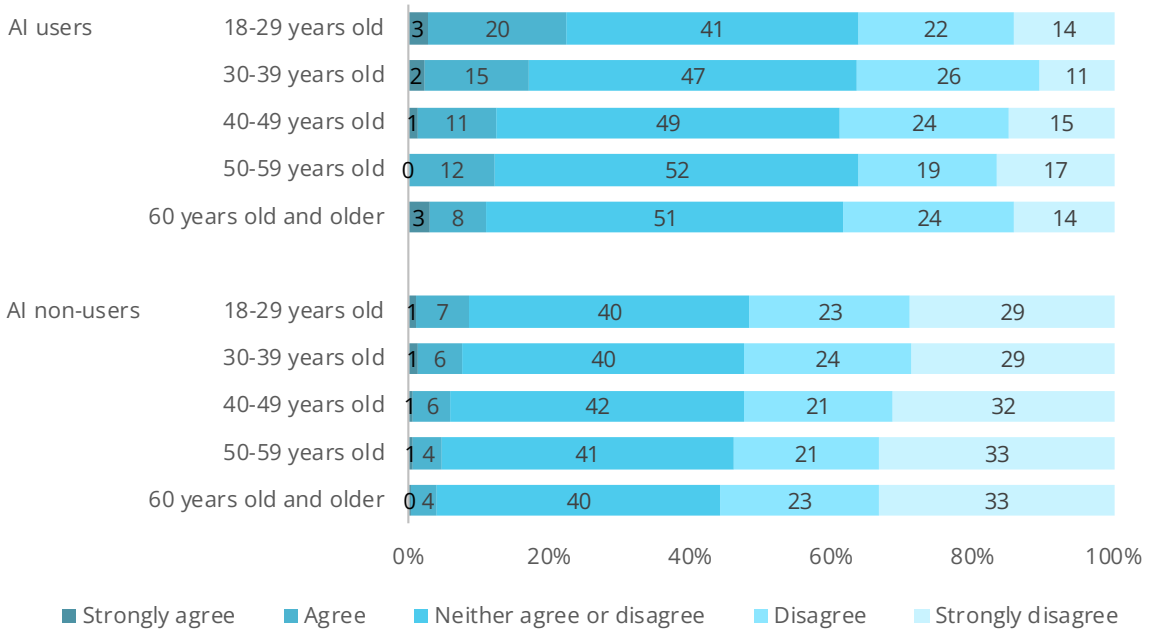
Note: In the context of obtaining information about your health, I trust AI-driven service recommendations.
Percentage base: AI users: women (n = 486), men (n = 833), AI non-users: women (n = 1,799), men (n = 1,510).

Figure 9 summarises trust in AI health recommendations by previous experience with AI and also by age. The data shows that trust in the health recommendations provided by AI was highest among those in the youngest age group (18-29 years old) for both AI users (23%) and non-users (8%), and it declined with age. In the group of people with prior AI experience, more than a third of the respondents in all age categories disagreed or strongly disagreed with the statement regarding trust in AI recommendations. In the group of those without AI experience, it was more than half of the respondents in all age categories. Thus, the percentage of distrustful persons did not appear to vary much by age.

11%

of respondents aged 60 years and more with prior experience with AI would trust AI health recommendations

Figure 9: Trust in AI health recommendations (by age and previous experience of AI use).



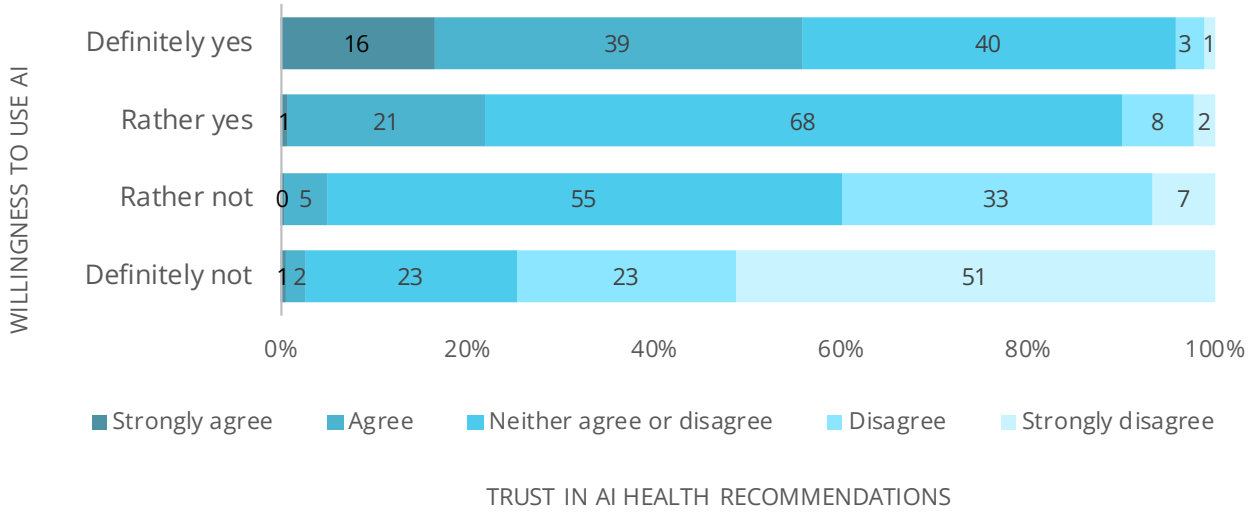
Note: In the context of obtaining information about your health, I trust AI-driven service recommendations.
Percentage basis: AI users: 18-29 years old (n = 446), 30-39 years old (n = 371), 40-49 years old (n = 226), 50-59 years old (n = 180), 60 years old and older (n = 99); AI non-users: 18-29 years old (n = 405), 30-39 years old (n = 716), 40-49 years old (n = 622), 50-59 years old (n = 739), 60 years old and older (n = 828)

Figure 10 shows that 55% of the participants who „strongly agreed" to use AI to search for information about a disease diagnosis also agreed that they trusted AI health recommendations. However, there is not always an direct connection between willingness to use AI to search for information about health and trust in it. For example, the 10% of respondents who were more likely to be willing to search for information about a disease diagnosis were also unlikely to trust these recommendations, and the majority (68%) was unsure of their trust. This is similar to respondents who would be unwilling to use AI to search for information about a disease diagnosis. A total of 5% of those who would rather not use AI for health information seeking would trust the AI health recommendations. The majority of this group (55%) were unsure of their trust.

10%

of respondents who were more likely to use AI to search for information about a disease diagnosis were also unlikely to trust AI recommendations

Figure 10: Willingness to use AI to seek information about a disease diagnosis and trust in the recommendations provided.



Note: **Willingness to use AI:** Would you use such an AI system to answer your questions related to the diagnosis of a disease? **Trust in AI recommendations:** In the context of obtaining information about your health, I trust AI-driven service recommendations.
Percentage basis: Definitely yes (n = 165), Rather yes (n = 919), Rather no (n = 1,364), Definitely no (n = 2,159)

CONCLUSION

This research report focused on the extent of AI use in a sample of Czech adults, their willingness to use AI to find health information, and their trust in the information provided. It also provides insight into the purposes for which Czech adults use AI services.

The results show that a third of the respondents have used AI in the past year, with men using AI slightly more than women. Younger respondents, mainly those aged 18-29, were more likely to use AI weekly or monthly. However, even in this age group, almost 50% of them have never used AI and the percentage increased with age. For the oldest age group, the percentage of non-users of AI was 90%. Young people have usually higher level of digital skills (Donoso, 2022), therefore, they may be more able to use AI than older people. People with university and higher vocational education were also more likely to use AI. For example, they used it to create images, check written text, find information, and for work purposes.

The willingness to use AI to search for health information differed between those with prior AI experience and those without AI experience. However, in both groups (with and without prior AI experience), respondents were slightly more willing to search for information related to proper exercise, healthy eating, or how to maintain or lose weight than on diagnosis of the disease, treatment options, or causes of symptoms. This trend was also evident among men and women. As in the general use of AI, younger respondents were slightly more likely to use AI to search for information related to health than older respondents.

Most respondents were neutral about their trust in the AI health recommendations, regardless of their prior experience with AI or gender. Both men and women with previous AI experience and younger people (aged 18-29) agreed more strongly that they trust AI health-related recommendations. The results also show that some of the respondents who would be willing to search for health information using AI were unsure of their trust in the information provided by AI. These results suggest that Czech adults may use or be willing to use AI without trusting the information provided by AI.

To interpret the presented results, it is necessary to consider that the participants answered the questions about using AI according to their understanding and perception of the concept. Thus, their interpretation of the concept may have influenced their answers. Although we encounter AI daily, we may often not be aware of it. Furthermore, it should be mentioned that this is only a sample of the Czech population that includes internet users as part of an online panel. Therefore, the results should not be generalized for Czech society, given that some people, especially from the older population, do not use the internet.

The future development of artificial intelligence will show how useful these technologies will be in the field of health and health information. To date, trust in AI is relatively low, which is understandable given its rapid development only in the last year. We can expect that special systems will be developed for the health sector and the provision of health information, making it possible to provide even more valid and trustworthy information. At the same time, AI developments are advancing so rapidly that social science research is struggling to reflect the rapid shifts in perception.

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